

EXHIBIT 1

Part 1

TODD KING, VOL I, 7-22-08

Page 1

IN THE UNITED STATES DISTRICT COURT FOR THE
NORTHERN DISTRICT OF OKLAHOMA

W. A. DREW EDMONDSON, in his)
capacity as ATTORNEY GENERAL)
OF THE STATE OF OKLAHOMA and)
OKLAHOMA SECRETARY OF THE)
ENVIRONMENT C. MILES TOLBERT,)
in his capacity as the)
TRUSTEE FOR NATURAL RESOURCES)
FOR THE STATE OF OKLAHOMA,)
Plaintiff,)
vs.) 4:05-CV-00329-TCK-SAJ
TYSON FOODS, INC., et al,)
Defendants.)

VOLUME I VIDEOTAPED DEPOSITION OF TODD KING,
produced as a witness on behalf of the Defendants in
the above styled and numbered cause, taken on the 23rd
day of July, 2008, in the City of Tulsa, County of
Tulsa, State of Oklahoma, before me, Marlene Percefull,
a Certified Shorthand Reporter, duly certified under
and by virtue of the laws of the State of Oklahoma.

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918-587-2878

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A P P E A R A N C E S

FOR THE PLAINTIFF: Mr. Robert Blakemore

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Ms. Kelly Burch
Assistant Attorney General
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-and-

Mr. David Page
Attorney at Law
502 West 6th St.
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FOR TYSON FOODS: Mr. Michael Bond

Attorney at Law
The Three Sisters Building,
214 West Dickson Street
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FOR CARGILL: Mr. Colin Tucker

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FOR SIMMONS FOODS: Mr. John Elrod

Attorney at Law
211 East Dickson Street
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FOR GEORGE'S: Ms. Paul Thompson, Jr.

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(Via phone)

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(Whereupon, the video deposition began at
9:02 a.m.)

THE VIDEOGRAPHER: We're here today for
the deposition of Todd King. Today is July 22nd,
2008. The time is 9:06 a.m. Would counsel please
identify themselves for the record. 9:03AM

MR. BLAKEMORE: Bob Blakemore for the
State of Oklahoma.

MS. BURCH: Kelly Burch, State of
Oklahoma. 9:05AM

MR. TUCKER: Colin Tucker for Cargill
Turkey Production and Cargill, Inc.

MR. McDANIEL: Scott McDaniel representing
Peterson Farms, Inc.

MR. THOMPSON: Paul Thompson, Jr., 9:05AM
representing George's.

MR. BOND: Michael Bond representing Tyson
Foods, Tyson Chicken, Tyson Poultry and
Cobb-Vantress.

MR. ELROD: John Elrod representing 9:05AM
Simmons.

THE VIDEOGRAPHER: Thank you. You may
swear the witness.

TODD KING,
having been duly sworn to tell the truth, the whole 9:43AM

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1 truth, and nothing but the truth testified as follows: 9:43AM
 2 DIRECT EXAMINATION
 3 BY MR. ELROD:
 4 Q Mr. King, where did you graduate from high school?
 5 A Algonac High School, Michigan. Algonac. 9:06AM
 6 Q Spell that, please.
 7 A A-L-G-O-N-A-C.
 8 Q What year?
 9 A 1981.
 10 Q Where did you go to college? 9:06AM
 11 A University of Michigan.
 12 Q What year did you graduate?
 13 A Undergrad, 1985.
 14 Q With a degree in what?
 15 A Chemical engineering. 9:06AM
 16 Q Any graduate degrees?
 17 A Master's in environmental engineering, 2000,
 18 University of Michigan.
 19 Q What did you do between '85 and 2000?
 20 A I was employed as an engineer. 9:06AM
 21 Q Where? Doing what?
 22 A From 1985 to 1990, I worked for a company called
 23 McNamee, Porter and Seeley out of Ann Arbor, Michigan.
 24 Between 1990 and 1994, I worked for Camp, Dresser and
 25 McKee. From 1994 to 1996, I worked for Environmental 9:07AM

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1 Resources Management in Ann Arbor. 9:07AM
 2 Q '94 to what?
 3 A '94 to '96. And '96 to present, I returned to
 4 CDM.
 5 Q And you operate out of what office? 9:07AM
 6 A Just the Michigan office.
 7 Q How many offices of CDM are there?
 8 A Approximately 80.
 9 MR. TUCKER: Mario Cart.
 10 MR. BOND: Everybody says that. 9:07AM
 11 Q How many people in your offices in Detroit?
 12 A About 20 currently.
 13 Q And do you have a specific job title with CDM?
 14 A Currently I am a principal engineering with Camp,
 15 Dresser and McKee, Inc., and vice president/treasurer 9:07AM
 16 of the wholly-owned subsidiary, CDM Michigan, Inc.
 17 Q What is it you do when you go to work in the
 18 morning?
 19 A I work on a variety of projects, primarily,
 20 currently, the Kalamazoo River Project, which is a PCB, 9:08AM
 21 contamination.
 22 THE REPORTER: I'm sorry, it was what?
 23 A Kalamazoo River and PCB contamination.
 24 THE REPORTER: Thank you.
 25 Q And who is your client there? 9:08AM

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1 A State of Michigan. 9:08AM
 2 Q Who are the adversaries?
 3 A Millennium Holdings, Georgia Pacific are the two
 4 primaries, Weyerhaeuser.
 5 Q Is there a lawsuit? 9:08AM
 6 A There's a consent order. I believe there was a
 7 lawsuit at one time, but I'm not sure if it's active or
 8 not.
 9 Q Did you -- have you given a deposition in that
 10 matter? 9:08AM
 11 A No.
 12 Q What other projects are you working on right now?
 13 A Working for some projects for Wayne County, Rouge
 14 River, their demonstration project. Also, a fine
 15 screen replacement project for the wastewater treatment 9:09AM
 16 plant.
 17 Q In what city?
 18 A Wyandotte, Michigan. The Rouge River project
 19 extends over approximately 280,000 acres of
 20 southeastern Michigan. 9:09AM
 21 Q What other projects are you involved in right now?
 22 A This project, the Motley Rice project.
 23 Q Any others?
 24 A I'm sure there's some that I'm forgetting.
 25 Q What is your role in the Kalamazoo River matter? 9:09AM

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1 A I've served as a variety of roles, project 9:09AM
 2 engineer, what we call client officer, client services
 3 manager, lead practitioner, which is a technical role.
 4 Currently I'm in that role, lead practitioner.
 5 Q What do you do, though? 9:10AM
 6 A Basically work with the DEQ, Department of
 7 Environmental Quality, to advise -- service the
 8 technical arm for the State as they look at this
 9 PCB-contaminated superfund site.
 10 Q Do you do any remediation suggestions in regard to 9:10AM
 11 that work?
 12 A Yes, we develop remedial scenario, cost estimates,
 13 et cetera, for various phases of that project, as well
 14 as the project overall to address the PCB
 15 contamination. 9:10AM
 16 Q And what is your role in the Rouge River matter?
 17 A For that, I was the client services officer or
 18 client service manager, which was responsible for the
 19 overall execution of the project from a financial
 20 administrative and client contact standpoint. 9:11AM
 21 Q What is CDM doing in that Rouge River project?
 22 A We are the program manager. That's a wet weather
 23 demonstration project that was executed under federal
 24 grant. And the basic scope of the project is to look
 25 at the watershed, the Rouge River watershed, and 9:11AM

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1 demonstrate the effectiveness of various best 9:11AM
 2 management practices, remedial options, addressing
 3 combined sewer overflows to improve the watershed in an
 4 urbanized environment.
 5 Q What did you just call it, an overflow? 9:11AM
 6 A Combined sewer overflows.
 7 Q Combined sewer overflows?
 8 A Uh-huh.
 9 Q Tell me what that is.
 10 A That is when a sanitary system is combined with a 9:11AM
 11 storm water system and during normal dry weather flows,
 12 all of the flow is directed towards the wastewater
 13 treatment plant, but during wet weather events, the
 14 sewer system is overcharged and discharges directly,
 15 sanitary waste directly to the -- 9:12AM
 16 Q That's a problem that you're attempting to
 17 address?
 18 A Yes.
 19 Q Okay. I thought you were describing something
 20 that was intentionally done as a VMP? 9:12AM
 21 A No.
 22 Q So you are suggesting VMPs and the Rouge River
 23 issue to deal with sewage bypass issues during high
 24 water events?
 25 A That's one aspect of it. 9:12AM

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1 Q What are the other aspects of it? 9:12AM
 2 A Well, public education is one aspect. There's
 3 been some different bank stabilizations, habitat
 4 restoration aspects, a lot of water quality monitoring
 5 to assess the current conditions. 9:13AM
 6 Q And you're the lead or the team that's doing these
 7 things?
 8 A No, I'm not the lead, technically, in that role.
 9 I've been the lead for the -- some of the
 10 infrastructure changes to the Newburgh dam as part of 9:13AM
 11 that project that was a remediation.
 12 Q If I wanted to read about this project, would I be
 13 able to find it on a Website somewhere?
 14 A Yes.
 15 Q What would I look for? 9:13AM
 16 A I believe the Website is www.RougeRiver.com.
 17 Q Okay. And if I wanted to -- if I wanted to find
 18 descriptions of the work being done in the Kalamazoo
 19 River Project, is there a Website I could go to to find
 20 that out? 9:13AM
 21 A Yes. There's -- the State of Michigan DEQ
 22 maintains a Website. EPA maintains a Website. And I
 23 believe the PRP's maintaining a Website.
 24 Q What did you do for CDM between '90 and '94?
 25 A I worked for -- primarily I was a site project 9:14AM

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1 manager for the State -- or, sorry, for various sites 9:14AM
 2 through the level of effort program through the State
 3 of Michigan, where we, again, served as a technical arm
 4 for the state in addressing cleanup projects.
 5 Q What -- when did you first become involved in this 9:14AM
 6 project?
 7 A I believe I worked with Ron French, I want to say
 8 early 2007, on some -- I think, looking at some biota
 9 data, some fish data.
 10 Q Who is Ron French? 9:15AM
 11 A He is a client service manager, area manager, for
 12 CDM out of the St. Louis office.
 13 Q What's his role in this matter?
 14 A I believe he serves as the client services
 15 manager. 9:15AM
 16 Q What does that mean?
 17 A Responsible for the overall client interaction,
 18 the administrative financial aspects.
 19 Q So there's a guy named Ron French who works out of
 20 the CDM St. Louis office who is the principal 9:15AM
 21 interfacier between CDM and the State of Oklahoma in
 22 this case?
 23 A I don't know if I would characterize it that way.
 24 Q How would you characterize it?
 25 A Ron is responsible for the financial performance 9:15AM

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1 internal, internal to the CDM, so -- 9:15AM
 2 Q What does that mean?
 3 A Just the profit, to make sure the profit and
 4 loss -- to make sure that the invoices go out on time.
 5 Q But I heard you say that in early 2007, I thought 9:16AM
 6 you said you were contracted by Ron French to look at
 7 some biota data?
 8 A He also serves in a technical role.
 9 Q Okay. What's his technical role?
 10 A Primarily biology. 9:16AM
 11 Q Is this project profitable to CDM?
 12 A I do not know.
 13 Q Who would know the answer to that question?
 14 A Ron French.
 15 Q Would Ron French also know the answer to the 9:16AM
 16 question of how much CDM has been paid to date
 17 throughout the entire project?
 18 A Yes, sir.
 19 Q What is that number?
 20 A I don't know. 9:16AM
 21 Q Have you -- have you been involved in any
 22 discussions about what that number is?
 23 A Not that I recall.
 24 Q Nobody has included you in on what the gross
 25 revenues of CDM have been to date in regard to this 9:16AM

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1 project? 9:16AM
 2 A Not that I recall specifically, no.
 3 Q What about your particular role in this project,
 4 what have been the gross revenues attendant to your
 5 particular work? 9:17AM
 6 A I don't deal with that when I'm in a technical
 7 role.
 8 Q So you don't know what gross revenues have been
 9 generated to CDM as a result of your work in this
 10 matter? 9:17AM
 11 A No, sir.
 12 Q Is there a particular reason why you would not
 13 know that?
 14 A It's not really a role. I mean, it's not really a
 15 concern when I'm in a technical role. It's -- 9:17AM
 16 Q Is there some ethical, internal ethical
 17 constraint?
 18 A No, it's just not information I've ever asked for.
 19 Q All right. So Ron French, who's in charge of the
 20 profit and loss for CDM in this particular matter, 9:17AM
 21 contacted you in early 2007 to look at some biota data,
 22 is that true?
 23 A Yes, sir.
 24 Q And why did he -- why did he contact you, Todd
 25 King? 9:17AM

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1 A I believe there was a meeting in Lansing, which is 9:18AM
 2 another one of our offices, and we've worked together
 3 on the Kalamazoo River Project so we know each other
 4 well, and I had done some work on the Chicago River.
 5 Q So is it true that in early 2007, there was a 9:18AM
 6 meeting between you and Ron French in Lansing,
 7 Michigan, to discuss this project?
 8 A Yes. That wasn't the specific purpose of the
 9 meeting, but I attended.
 10 Q What was the purpose of that meeting? 9:18AM
 11 A I don't recall.
 12 Q Did you meet for other reasons and he just
 13 happened to mention to you, Hey, we've got this thing
 14 going on in Oklahoma, I'd like for you to look at some
 15 biotic data? How did that happen? 9:18AM
 16 A I think it was -- I don't recall exactly, but I
 17 think there was some data that he needed to look at and
 18 I happened to be available at that time.
 19 Q And that was your first involvement in this
 20 project, is that true? 9:19AM
 21 A What I recall, yeah.
 22 Q If I wanted to be able to create an accurate
 23 timeline that would take us from early 2007 to July 22,
 24 2008, assuming that's what today's date is, what would
 25 be available to describe with specificity the work 9:19AM

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1 you've done during that period of time for this 9:19AM
 2 project?
 3 A I'm not sure what the invoice project reporting
 4 structure is for this project.
 5 Q Do you keep time sheets? 9:20AM
 6 A Yes.
 7 Q And you turn those time sheets in to whom?
 8 A They're electronic. They go into payroll.
 9 Q I mean, would I be able to -- if I knew the right
 10 button to hit on your computer, would I be able to gen 9:20AM
 11 up the invoices attended to the work done by Todd King
 12 in this matter?
 13 A I think that could be generated. I'm not sure
 14 exactly how many buttons you'd have to push to get it.
 15 Q Who would be the chief button pusher at CDM that 9:20AM
 16 would generate those reports?
 17 A Well, invoices are generated by the
 18 administrative. There's a financial group that
 19 generates invoices.
 20 Q If I wanted to pick up a telephone and call 9:20AM
 21 somebody at CDM, assuming they would talk to me, who
 22 would I call to get that done?
 23 A For this project, I'm not 100 percent sure.
 24 Q What is your best guess?
 25 A The person I usually talk to is Cindy Falce. 9:20AM

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1 Q Cindy what? 9:21AM
 2 A Falce.
 3 Q F-A-L-T-Z?
 4 A F-A-L-C-E.
 5 Q F-A-L-C-E. Where is she located? 9:21AM
 6 A Pittsburgh.
 7 Q And what's her job?
 8 A Financial manager. Again, I don't know if this
 9 project is billed through that financial center or not,
 10 but that's the person I typically deal with. 9:21AM
 11 Q And how many hours have you spent in total working
 12 in this matter from early 2007 to July 22, 2008?
 13 A Well, for this report, between 450 and 500 and
 14 prior to that, I don't recall.
 15 Q Now, have you done work in this matter that's not 9:21AM
 16 discussed or incorporated in the report?
 17 A Just that initial meeting, which was kind of ad
 18 hoc.
 19 Q So is it true then that other than the initial
 20 meeting in early 2007, all of your efforts in this 9:22AM
 21 project have culmination in the report issued by you on
 22 May 15, 2008?
 23 A The 450 to 500 hours culminate in this report.
 24 Q So that's all you've worked on is my point in this
 25 project? 9:22AM

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1 A This report and the previous -- that meeting, I 9:22AM
 2 can't recall if there was some other incidental things
 3 that happened.
 4 Q Have you conducted any investigations yourself in
 5 terms of the purported injuries to the IRW? 9:22AM
 6 A No, I've basically been in an office role.
 7 Q So in terms of the assessment of whether any,
 8 quote, injuries, end quote, have, in fact, occurred in
 9 the Illinois River, you are accepting at face value the
 10 work of other people? 9:23AM
 11 MR. BLAKEMORE: Object to the form.
 12 A Um, I am relying on -- in terms of preparing this
 13 report, I was relying on the experts and the work that
 14 was conducted by CDM.
 15 Q By other people? 9:23AM
 16 A By other --
 17 Q People other than you?
 18 A By people other than me in terms of physically
 19 collecting samples or --
 20 Q And analyzing data, reaching conclusions as to 9:23AM
 21 whether an injury even has occurred, things of that
 22 nature?
 23 A Well, as part of putting together the report,
 24 I've, you know, discussed the project with the various
 25 experts and had access to the underlying data, so I'm 9:23AM

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1 not totally reliant on -- 9:23AM
 2 Q For instance, in paragraph --
 3 MR. BLAKEMORE: Could you let him finish
 4 his answers, please.
 5 Are you through? 9:24AM
 6 A Well, I've just been relying on -- well, I
 7 certainly rely on the experts and I certainly have
 8 looked at the underlying raw data.
 9 Q Are you through now?
 10 A Yes, sir. 9:24AM
 11 Q In Paragraph 1.1, for instance, at the end of the
 12 very first paragraph on Page 2 of the report, it
 13 states, "This report was prepared on behalf of the
 14 State of Oklahoma to address injuries to the portion of
 15 the IRW within the State of Oklahoma." The question of 9:24AM
 16 whether there has been an injury to any portion of the
 17 IRW is a conclusion reached by people other than
 18 yourself?
 19 A Yes, sir.
 20 Q All right. Have you reached any independent 9:24AM
 21 conclusions regarding phosphorus source allocation?
 22 A Not independent of the work as a whole.
 23 Q All right. Have you reached any independent
 24 conclusions regarding -- strike that. Is there a
 25 particular lawyer with whom you've worked with the 9:25AM

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1 State of Oklahoma more than others? 9:25AM
 2 A Until recently, probably Claire Xidis.
 3 Q And would -- was there a handoff from -- by Claire
 4 to somebody else recently?
 5 A Bob. 9:26AM
 6 Q Who?
 7 A Mr. Blakemore.
 8 Q When did that happen?
 9 A Well, I think Mr. Blakemore was involved in
 10 previous calls, but he just -- with respect to the 9:26AM
 11 deposition, I was coordinating more through him in the
 12 last few weeks.
 13 Q Why did that happen?
 14 A I do not know.
 15 Q Did I ask you when did it happen? 9:26AM
 16 A I said the last few weeks.
 17 Q Okay. So in terms of getting prepared for this
 18 deposition, Mr. Blakemore has been your principal
 19 keeper and handler?
 20 A He told me when to show up and where. 9:26AM
 21 Q And have you met with Mr. Blakemore and other
 22 attorneys in terms of preparing your testimony today?
 23 A Just yesterday, not -- with the two attorneys
 24 sitting across from you.
 25 Q Ms. Burch and Mr. Blakemore? 9:27AM

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1 A Yes, sir. 9:27AM
 2 Q How long was that meeting?
 3 A Oh, I think we started around 8:30 and finished up
 4 around 4:00.
 5 MR. ELROD: Is there a particular 9:27AM
 6 numbering scheme that we've adopted?
 7 MR. McDANIEL: Just start with number one
 8 and if you'd just put his name on the sticker,
 9 that's what we've been doing.
 10 Q Let me hand you what has been marked as King 9:27AM
 11 Exhibit 1. Sorry I didn't bring more.
 12 MR. McDANIEL: Incredibly informative,
 13 John.
 14 Q Take a minute to look through this packet, if you
 15 want to, Mr. King, it's a bunch of blank pages mainly. 9:27AM
 16 A Okay.
 17 Q When we went into your considered materials CD
 18 that was provided to us by counsel, we pulled up a
 19 bunch of blank pages and I've accumulated a number of
 20 those in this particular exhibit. I want to ask you 9:28AM
 21 about them. First of all, why are they blank?
 22 A I don't know.
 23 Q Well, are you the person who submitted these blank
 24 pages to the computer and to opposing counsel?
 25 A Not knowingly, no. 9:28AM

6 (Pages 18 to 21)

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1 Q The first one is King, and then I'm going to skip 9:28AM
 2 a bunch of zeros, 2.0001, and it's on the letterhead of
 3 the Bell Legal Group and that's all that's on this
 4 page. Who's the Bell Legal Group?
 5 A I don't know. 9:29AM
 6 Q Is that a law firm this Mr. David Page has been
 7 involved with?
 8 A I don't recall.
 9 Q You have no explanation for why the computer spit
 10 out these blank sheets of paper? 9:29AM
 11 A No, sir.
 12 Q Third page in is a document that's blank, also.
 13 It says "Begin: Vcard, Version 2.1, N: Fisher, Bert:
 14 Bert," do you see that?
 15 A Uh-huh. 9:29AM
 16 Q What is that?
 17 A Looks like Bert's e-mail address.
 18 Q And do you have any explanation for why the
 19 computer would spit out a blank sheet of paper?
 20 A No, sir. 9:30AM
 21 Q How did you principally communicate with your
 22 co-workers and with counsel in this case?
 23 A E-mail and phone.
 24 Q The next page is the same sort of, quote,
 25 formatting, says "Portland State University" at the 9:30AM

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1 top. Is there a person named Wells at Portland State 9:30AM
 2 University who is an expert in this case in terms of
 3 lake modeling with whom you've worked?
 4 A Yes, sir.
 5 Q Do you have any idea what was on this sheet of 9:30AM
 6 paper before it became blank?
 7 A No.
 8 Q Do you have any idea how I'd go about finding
 9 the -- a Portland State University letterhead that
 10 actually had words on it? 9:30AM
 11 A I don't know. I mean, I could conjecture, but I
 12 don't know.
 13 Q Could you go ahead and conjecture?
 14 A It looks like it might be the signature to the
 15 e-mails or something. 9:30AM
 16 Q The what?
 17 A The signature block to the e-mails.
 18 Q You're going to have to explain that to me. I'm
 19 looking at a piece of paper that just says Portland
 20 State University in the upper left-hand corner. I 9:31AM
 21 don't understand what you're saying.
 22 A A lot of times in e-mails people will put in
 23 little graphics as part of their signature. This looks
 24 like one of those graphics.
 25 Q Where are the e-mails to which these things are 9:31AM

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1 attached located? 9:31AM
 2 A They were put in a .PST file and given to Claire.
 3 Q Do you have an explanation for this?
 4 MR. BLAKEMORE: That's what they are,
 5 they're signatures. They're like some people, when 9:31AM
 6 they do signatures to their e-mails, they are
 7 attachments and I know that when David was with Bell
 8 Legal Group, his signature was an attachment and so
 9 when you print out the e-mails, they just print out
 10 these as a separate attachment. That's it. They're 9:32AM
 11 not -- it's not letterhead.
 12 Q Okay. Let's start working our way through your
 13 report, Mr. King. Tell me all the names of all the
 14 people with whom you worked in preparing this report?
 15 A Well, Dr. Roger Olsen, Bert Fisher, Dennis Cooke, 9:32AM
 16 Gene Wells, Scott Wells, Jan Stevenson, Gordon Johnson
 17 and Ann Butler, Shannon Phillips, Robert
 18 Van Waasbergen.
 19 Q That was poorly put together, I apologize for
 20 that. What I really want to know at this stage of the 9:33AM
 21 proceedings is who else inside CDM or that you would
 22 call co-workers other than other experts listed in 1.2
 23 did you work with in preparing this report?
 24 A Dr. Tony Gendusa.
 25 Q Spell his name, please. 9:33AM

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1 A G-E-N-D-U-S-A. As far as experts go or -- 9:33AM
 2 Q No.
 3 A Just in general?
 4 Q Staff, anybody.
 5 A Renee Mulcrone, M-U-L-C-R-O-N-E, LaJoyce Mullins 9:33AM
 6 Williams, LaJoyce.
 7 THE REPORTER: Spell LaJoyce?
 8 A L-A, capital J-O-Y-C-E.
 9 Q Mullins Williams?
 10 A Yeah. 9:33AM
 11 Q Who else?
 12 A Sheila Chowdhury, C-H-O-W-D-H-U-R-Y.
 13 Q Anybody else?
 14 A Not that I recall right now.
 15 Q What was Tony's job? 9:34AM
 16 A Tony was biological aquatic biologist -- no, I'm
 17 sorry, not aquatic biologist, but just biologist.
 18 Q And where does Tony work out of?
 19 A Arkansas Springs, I think.
 20 Q What? 9:34AM
 21 A Arkansas Springs.
 22 Q Arkansas Springs what?
 23 A Arkansas.
 24 Q There is no place called Arkansas Springs,
 25 Arkansas. Hot Springs, Arkansas? 9:34AM

7 (Pages 22 to 25)

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1 A Hot Springs. 9:34AM
 2 Q Hot Springs?
 3 A Could be, yes.
 4 Q Is he a CDM employee?
 5 A Yep. 9:34AM
 6 Q What did Renee do?
 7 A Renee helped me with the -- a bunch of the
 8 research and pulling together the documents and helped
 9 draft some of the sections.
 10 Q What office does she work out of? 9:35AM
 11 A Ann Arbor.
 12 Q What did LaJoyce do?
 13 A Basically research into kind of applicable
 14 regulations, put together table of regulations for me.
 15 Q What did Sheila do? 9:35AM
 16 A Sheila worked on some of the costs of
 17 developing -- or finding some of the costs for
 18 specifically, I believe it was, transport.
 19 Q Any other costs that she worked on?
 20 A No, that was pretty much it. 9:35AM
 21 Q Now, is Tony an engineer?
 22 A No, actually, Tony was somebody I worked with on
 23 the project. I guess he really didn't have any input
 24 into this work product.
 25 Q What did you do with him on the project? 9:35AM

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1 A Oh, just attended a meeting in Tulsa. 9:35AM
 2 Q Did Tony have any other roles in this case?
 3 A I'm -- I believe he looked at some of the stuff,
 4 but I'm not sure what exactly his work product was.
 5 Q Well, did he have any input at all into your 9:36AM
 6 report?
 7 A Not formally. Certainly we discussed the project.
 8 Q What does Tony do for a living?
 9 A Ecological risk assessment mainly.
 10 Q Is he a CDM employee? 9:36AM
 11 A Yes, sir.
 12 Q And is Renee an engineer?
 13 A No, she's a scientist/biologist.
 14 Q Does she have -- what degree does she hold?
 15 A PhD. 9:36AM
 16 Q And what did she do in this case?
 17 A A lot of literature searching.
 18 Q Into what areas?
 19 A Various best management practices, applicable
 20 technologies. She's got access to the University of 9:37AM
 21 Michigan library so it's helpful.
 22 Q Have you now named all the people internal to CDM
 23 who aided you in the preparation of this report?
 24 A To the best I can recall, yeah.
 25 Q And of -- in your previous response, have you now 9:37AM

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1 named all of the people? 9:37AM
 2 A I guess Roger Olsen. I don't know if I've named
 3 him.
 4 Q Sure you did. Other than Roger Olsen, then have
 5 you also named all of the people external to CDM who 9:37AM
 6 aided you in this report?
 7 A I believe so, yeah. There might be a name or two
 8 I'm forgetting.
 9 Q How many meetings have you attended between spring
 10 of 2007 and today in the preparation of your report 9:38AM
 11 that addressed issues that ended up in the preparation
 12 of your report?
 13 MR. BLAKEMORE: Object to form.
 14 A I don't recall the specific number of meetings. I
 15 did come to Tulsa one time to, basically, hear some of 9:38AM
 16 the preliminary findings from the experts.
 17 Q When was that meeting?
 18 A I don't recall.
 19 Q Can you get me close?
 20 A Not off the top of my head. 9:38AM
 21 Q Well, I need an answer to the question. I mean,
 22 if it's two months ago or 20 months ago, I'd like to
 23 know.
 24 A I think it's over a year ago.
 25 Q And who attended that meeting? 9:38AM

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1 A David Page, Denny Cooke, Gene Wells, Tony Gendusa, 9:38AM
 2 Ron French, Roger Olsen, Andrew Santini, who is another
 3 name I worked with. Didn't have any direct input to
 4 the project. He's out of our Lansing office. There
 5 were a few other folks there, but I don't recall their 9:39AM
 6 names. Bert Fisher. Sorry.
 7 Q And what does Mr. Santini do?
 8 A Drew runs the field activities for the Kalamazoo
 9 River and was heavily involved in the field collection
 10 activities for this project. 9:39AM
 11 Q What was his involvement in the field collection?
 12 A Setting up sampling teams, writing standard
 13 operating procedures, conducting the work.
 14 Q And what office does he work out of?
 15 A Primarily the Lansing office. 9:39AM
 16 Q He's a CDM employee?
 17 A Yes, sir.
 18 Q Has he physically been in the field himself?
 19 A Yes.
 20 Q Have you physically been in the field? 9:40AM
 21 A I've been on site but not in the field work
 22 capacity.
 23 Q On site, meaning inside the IRW?
 24 A Yeah.
 25 Q How many trips inside the IRW have you made? 9:40AM

8 (Pages 26 to 29)

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1 A Just one. 9:40AM
 2 Q When was that?
 3 A Yesterday.
 4 Q So it's true that your report was prepared before
 5 you ever set foot inside the IRW? 9:40AM
 6 A Yes, sir.
 7 Q What did you do yesterday?
 8 A Just drove around Lake Tenkiller looking at the --
 9 the condition of the lake and getting a feel for the
 10 site. 9:40AM
 11 Q And who accompanied you on that trip?
 12 A No one.
 13 Q I thought you met with counsel yesterday between
 14 8:30 in the morning and 4:00 o'clock in the afternoon.
 15 Am I wrong about that? 9:40AM
 16 A No, you're right.
 17 Q So when did you have time to drive around
 18 Tenkiller?
 19 A After that, I drove out.
 20 Q So between 4:30 and last night you drove around 9:41AM
 21 Tenkiller?
 22 A Uh-huh.
 23 Q By yourself?
 24 A Uh-huh.
 25 Q That's the first time you've been to the IRW? 9:41AM

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1 A Yes, sir. 9:41AM
 2 Q What are the six largest tributaries of the
 3 Illinois River?
 4 A The ones I'm familiar with are Baron Fork and
 5 Caney Creek. 9:41AM
 6 Q Any others?
 7 A Not that I recall.
 8 Q And you'll agree with me that both Baron Fork and
 9 Caney Creek flow into -- actually, Caney Creek flows
 10 into Tenkiller itself, doesn't it? 9:41AM
 11 A I don't recall exactly, but the three of those
 12 combined make up the input to Lake Tenkiller.
 13 Q And Baron Fork flows into the Illinois River
 14 mainstream at the top of Lake Tenkiller, isn't that
 15 true? 9:42AM
 16 A I don't recall.
 17 Q So are you unable then to name the largest
 18 tributaries of the main stem of the Illinois River
 19 above the point where Baron Fork flows in?
 20 A Yes, sir. 9:42AM
 21 Q How many meetings other than the one in Tulsa have
 22 you been to with any other experts in this case?
 23 A None that I recall.
 24 Q Now, I've got a packet of e-mails and we'll go
 25 into those later on in the day, but in Paragraph 1.2 9:42AM

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1 you talk about having discussions with particular 9:43AM
 2 experts?
 3 A Uh-huh.
 4 Q I want to do this, what -- one thing you're going
 5 to discover about me, Mr. King, is I'm very impatient 9:43AM
 6 and about 2:00 o'clock in the afternoon I really start
 7 getting antsy, so I want to do this in the most
 8 efficient way possible, but still capture everything we
 9 need to know. Let me start big and try to get small.
 10 What kinds of discussions did you have with these 9:43AM
 11 people over the telephone, electronically, how did you
 12 communicate with them?
 13 A Over the telephone primarily.
 14 Q Did you attend conference calls at which more than
 15 one of these people would be present along with you? 9:43AM
 16 A Yes.
 17 Q And can you quantify the approximate number of
 18 conference calls you would have been involved with?
 19 A On the order of a half dozen.
 20 Q And when did you really start getting geared up to 9:43AM
 21 prepare this report as opposed to the spring of 2007
 22 when you looked at this stuff?
 23 A Let's say late last year.
 24 Q Late 2007?
 25 A Yeah, maybe fall, maybe a little bit earlier than 9:44AM

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1 that. 9:44AM
 2 Q And who first approached you about doing this
 3 work?
 4 A I believe it was Roger Olsen.
 5 Q What did Mr. Olsen task you with doing? 9:44AM
 6 A Dr. Olsen had a list of injuries and wanted me to
 7 get involved with putting together cost estimates. And
 8 now that I say that, I'm recalling that I also put
 9 together some preliminary cost numbers earlier in the
 10 project that I hadn't mentioned previously. 9:44AM
 11 Q Was that also done at the request of Roger Olsen?
 12 A Yep.
 13 Q Is there a kind of a hierarchy inside CDM in terms
 14 of who jumps when somebody else says jump?
 15 A Project dependent, I mean, but -- 9:45AM
 16 Q I mean, if Roger Olsen picks up the telephone and
 17 says, Will you do, then would you do it?
 18 A Yeah. But I've had a long history. I've worked
 19 with Roger a long time as well.
 20 Q Okay. If you'd picked up the telephone and told 9:45AM
 21 Roger Olsen to do something, would he do it?
 22 A If we could, I'm sure we would, but --
 23 Q Is there somebody you report to on a daily basis
 24 inside CDM?
 25 A I wouldn't say on a daily basis, but my supervisor 9:45AM

9 (Pages 30 to 33)

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1 is Bernie Malloy. 9:45AM
 2 Q And he's in the --
 3 A Louisville office.
 4 Q Louisville office?
 5 A Uh-huh. 9:45AM
 6 Q Why do you report to somebody in the Louisville
 7 office? What is it about your hierarchy?
 8 A Well, we are a matrix management firm, so command
 9 and control is -- kind of goes along the functional
 10 lines. 9:46AM
 11 Q I don't know what the words "matrix management"
 12 mean.
 13 A The company is divided into two basic sides. One
 14 is the consulting and engineering division, which is
 15 the -- kind of the technical side, and the other is the 9:46AM
 16 service group side, which is -- or the client service
 17 manager is kind of the business aspects of the firm, so
 18 that's divided into public sector, industrial, federal
 19 and international, so I'm on the CED side.
 20 Q The CEDC (sic) side? 9:46AM
 21 A The CED, the consulting engineering division, the
 22 technical side, and on that side I'm a group leader.
 23 Q What's Malloy's title?
 24 A Technical services manager, I think.
 25 Q Do you always work for him? 9:47AM

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1 A Have I always worked for him? 9:47AM
 2 Q Do you always work for him? I mean, in all
 3 projects that you do, is it Bernie Malloy that you
 4 answer to?
 5 A No, as far as projects go, the project is 9:47AM
 6 organized under a project manager. So Darren Brown is
 7 the project manager for this project.
 8 Q Has he always been the project manager for this
 9 project?
 10 A I don't know. 9:47AM
 11 Q And what's the definition of this project? Is it
 12 State of Oklahoma versus --
 13 A I recall Motley Rice internal, but I'm not sure.
 14 Q Okay. So Darren Brown is the project manager
 15 inside CDM, and does that mean he's the chief organizer 9:47AM
 16 of all tasks?
 17 A He's responsible for tracking all tasks. Roger
 18 Olsen is the -- I believe he's the lead practitioner so
 19 he's got the overall responsibility for the technical
 20 direction of the project. 9:48AM
 21 Q And so long as you know, has Roger Olsen always
 22 occupied that seat in this case?
 23 A As far as I know, yeah.
 24 Q So organizing it and interfacing with the law firm
 25 of Motley Rice out of South Carolina would be Darren 9:48AM

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1 Brown's job, is that true? 9:48AM
 2 A I don't know the specifics of the day-to-day how
 3 this project is managed, but it certainly could be
 4 Roger Olsen, it could be Darren, it could be Ron, any
 5 of those positions can have quite a bit of client 9:48AM
 6 interaction.
 7 Q Okay. And then the science side of CDM's
 8 responsibilities end up in the lap of Roger Olsen, is
 9 that true?
 10 A Uh-huh. 9:49AM
 11 Q And you would be on the science side of it?
 12 A Sure.
 13 Q So we're talking about approximately six
 14 conference calls over the last seven or eight months,
 15 is that fair? 9:49AM
 16 A I think that's six conference calls with more than
 17 one expert, yeah.
 18 Q Okay. Then how many individual phone calls would
 19 you have had with, say, Roger Olsen?
 20 A Oh, I don't know, two to three times that many. 9:49AM
 21 Q Okay. Did you keep notes?
 22 A Yeah, I mean --
 23 Q Did you keep notes of all these phone calls?
 24 A Not necessarily.
 25 Q Did you keep notes of most of the phone calls? 9:49AM

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1 A I don't know if I could say what proportion, but, 9:49AM
 2 yeah, I think for the most part.
 3 Q What's been the fate and transport of your notes?
 4 A I think they're sitting somewhere in my office. I
 5 moved and -- 9:50AM
 6 Q Have you turned those over to counsel?
 7 A I don't know, so -- no.
 8 Q Are they organized in a file?
 9 A No.
 10 Q Are they retrievable? 9:50AM
 11 A With some effort, yeah.
 12 MR. ELROD: I'm going to go ahead and make
 13 a request on the record that we obtain ASAP all of
 14 the notes of his phone calls with anybody with
 15 regard to this project. 9:50AM
 16 MR. McDANIEL: Hey, John?
 17 MR. ELROD: Yeah.
 18 MR. McDANIEL: Can we inquire as to the
 19 breadth of any other contents of those notes while
 20 we're on the topic, beyond telephone conversations. 9:50AM
 21 MR. ELROD: Yeah.
 22 MR. BOND: I honestly think we could get
 23 them faster e-mailed today.
 24 MR. ELROD: Yeah.
 25 MR. BOND: It's his deposition now, let's 9:50AM

10 (Pages 34 to 37)

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1 get those notes today during the deposition. 9:50AM
 2 MR. ELROD: And your question, Scott,
 3 was --
 4 MR. McDANIEL: Whether these notes covered
 5 topics beyond just phone conversations. 9:50AM
 6 MR. ELROD: Yeah.
 7 Q I adopt that question.
 8 A I don't know. I mean, I'm not sure I understand
 9 the question.
 10 Q Do the notes that you have in your office go 9:51AM
 11 beyond the scope of just your conversations with these
 12 other experts?
 13 A Yeah, I mean, they're notes relative to thoughts
 14 and things that I was doing on the project, sure.
 15 Q Okay. We really do need those as quickly as we 9:51AM
 16 can get them. Do you have a secretary in your office?
 17 A Not that -- well, I don't know if I said or not,
 18 but we've been moving so quite a few things are boxed
 19 up and it would take some effort to find them all.
 20 Q But it can be done? 9:51AM
 21 A Sure.
 22 Q Is there a person who can do that right now
 23 sitting in your office over there?
 24 A I think it's going to be me going through and
 25 grabbing them. 9:51AM

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1 Q Did anybody from the -- any lawyers tell you 9:51AM
 2 that -- to gather those things up and get them to us?
 3 A The direction I was given was considered materials
 4 so I didn't -- anything that I reviewed, any reports,
 5 studies, things of that nature, the e-mails. I didn't 9:52AM
 6 think that my handwritten notes were part of that
 7 direction.
 8 MR. ELROD: Anybody else have comments on
 9 the record before I move on?
 10 MR. BLAKEMORE: I do. 9:52AM
 11 MR. ELROD: Go ahead.
 12 MR. BLAKEMORE: If he didn't review them,
 13 I would say that they're not considered materials.
 14 If he just wrote them while he's on a call without
 15 reviewing them and they weren't part of the report, 9:53AM
 16 then I don't know that they would be considered
 17 materials.
 18 MR. ELROD: Well, but the whole concept of
 19 discovery is to the extent we can, we get to look
 20 over his shoulder and to find out what he was 9:53AM
 21 thinking about and see if there's anything
 22 contradictory in his notes versus what's in his
 23 report, and it's unbelievable to me that our general
 24 discovery would not have addressed anything that
 25 this expert or any of your experts has written, 9:53AM

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1 notebooks. You're certainly going to be asking our 9:53AM
 2 people for those things and you'll be entitled to
 3 them. So, I mean, my suggestion is going to be that
 4 we slug on through today as much as we -- as far as
 5 we can get, and then I hope -- I hope, with your 9:53AM
 6 cooperation, we can reconvene this deposition after
 7 we receive his notes. That's what I'm asking for.
 8 You don't have to respond at this moment.
 9 MR. BLAKEMORE: Okay.
 10 Q Did you go back and review your notes at all in 9:54AM
 11 terms of the preparation of this report?
 12 A I think for the most part I relied on the
 13 expert -- the expert work products and -- and the
 14 technical literature review and substantially
 15 everything that I relied upon is in the report. 9:54AM
 16 Q All right. What -- and once again, back to the
 17 efficiency issue. I don't know any way to do this
 18 other than just to go through these names and ask you
 19 what conversations you had. With Bert Fisher, he's the
 20 next one, how many did you have with him and what were 9:55AM
 21 the subject matters?
 22 A Probably --
 23 MR. THOMPSON: John?
 24 MR. ELROD: Yeah.
 25 MR. THOMPSON: If I could real quick, we 9:55AM

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1 need to get Jennifer Griffith on the phone, if this 9:55AM
 2 is a logical spot to do that.
 3 MR. ELROD: Yeah.
 4 MR. THOMPSON: She's hounding us.
 5 MR. ELROD: We're breaking? 9:55AM
 6 MR. THOMPSON: Well, we just need to dial
 7 in for another counsel.
 8 MR. ELROD: We can take a break. Take a
 9 break.
 10 THE VIDEOGRAPHER: We are now off the 9:55AM
 11 record. The time is now 9:56 a.m.
 12 (Following a short recess, proceedings
 13 continued on the record.)
 14 THE VIDEOGRAPHER: We are back on the
 15 record. The time is now 10:09 a.m. 10:09AM
 16 Q So we are back to Paragraph 1.2, Mr. King, and the
 17 people with whom you had discussions. What was it you
 18 would have talked to Roger Olsen about?
 19 A The discussions with Roger were basically to
 20 develop the scope of work and the level of effort to 10:09AM
 21 prepare this report, as well as some of the background
 22 on where the project was at and the different -- who
 23 all the different people involved were.
 24 Q Did he lend any information to you that you used
 25 substantively in your report? 10:09AM

11 (Pages 38 to 41)

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1 A I mean, in terms of developing the initial 10:09AM
 2 approach, certainly.
 3 Q Have you ever done one of these before?
 4 A I've worked on a variety of feasibility studies,
 5 sure. 10:10AM
 6 Q What about remediation evaluations like this?
 7 A This is definitely unique, but I've worked on
 8 similar types of projects.
 9 Q Why is this one unique?
 10 A Oh, just the poultry waste aspect and just the 10:10AM
 11 size.
 12 Q Have you done remediation evaluation work in terms
 13 of -- in CERCLA cases before?
 14 A That's primarily a superfund-type project.
 15 Q That's primarily what you do? 10:10AM
 16 A That's what I've done historically, sure.
 17 Q Have you ever, in your entire career, encountered
 18 a facility that was a million acres of ground?
 19 A Well, I mean, currently the Kalamazoo River
 20 watershed is a little bit larger. It's almost one and 10:10AM
 21 a quarter million acres, but we worked on an 80-mile
 22 stretch of that river.
 23 Q And has a court deemed that to be a CERCLA
 24 facility?
 25 A The river itself is on the NPL list. 10:11AM

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1 Q Who described it -- has a court ever determined 10:11AM
 2 that the Kalamazoo River is CERCLA, quote, facility,
 3 end quote?
 4 MR. BLAKEMORE: Object to the form.
 5 A I know that the site is on the superfund list. 10:11AM
 6 Q Do you know the answer to my question regarding
 7 whether a court has ever deemed that river to be a
 8 CERCLA facility?
 9 MR. BLAKEMORE: Object to the form, beyond
 10 the scope. 10:11AM
 11 A I don't know the answer.
 12 Q Okay. Is it true that most of the CERCLA, quote,
 13 facilities, unquote, that you've encountered have been
 14 like a manufacturing location?
 15 A Well, some of them are manufacturing locations, 10:12AM
 16 but in the case of the Kalamazoo River, certainly that
 17 project extends over 80 miles worth of river and
 18 there's three to four different paper mills that were
 19 contributors.
 20 Q So what did Bert Fisher -- did he provide any 10:12AM
 21 substantive information to you to use in your report?
 22 A Yeah, primarily he was the source of information
 23 for the areole site setting, geological setting, some
 24 of the estimates for the poultry waste production.
 25 Q What else did Bert provide you that were used in 10:12AM

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1 your report? 10:12AM
 2 A That's kind of the overview.
 3 Q What about Dennis Cooke, C-O-O-K-E?
 4 A Dr. Cooke and Dr. Welch helped me with --
 5 MS. GRIFFIN: This is Jennifer Griffin. I 10:13AM
 6 hate to interrupt, but I can't hear anything.
 7 MR. ELROD: I didn't think so. We need
 8 to -- can we move that -- can you grab that
 9 telephone and see if it's got enough cord to come up
 10 here to the table? Jennifer, we've got a telephone 10:13AM
 11 with a six-foot cord and it needs to have about ten
 12 feet, so we're going to move you as close as we
 13 physically can.
 14 MS. GRIFFIN: Okay. I can hear you now.
 15 At the beginning I could hear and then it was just 10:13AM
 16 silent.
 17 Q All right. Drs. Cooke and Welch. When you were
 18 on the phone with them, were you always on the phone
 19 with them together or would you sometimes talk to one
 20 or the other separately? 10:13AM
 21 A Usually separately. Occasionally, like I say, in
 22 those other half-dozen calls they were together.
 23 Q All right. What did Drs. Cooke and Welch say to
 24 you?
 25 A Well, with them I was primarily interested in Lake 10:14AM

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1 Tenkiller, talking about what potential remedial 10:14AM
 2 alternatives were applicable to that, what the injuries
 3 were and kind of developing a good list to start with
 4 on potential remedial actions.
 5 Q And what did they say to you? 10:14AM
 6 A They told me to read their book, which I did, and
 7 that was a source of quite a bit of information that
 8 was incorporated here.
 9 Q What's the name of that book? Is it in your
 10 attached? 10:15AM
 11 A It's in my cite references.
 12 Q Is there only one Cooke and Welch book that's --
 13 A It's the latest edition, third edition, I think.
 14 Restoration and Management of Lakes and Reservoirs,
 15 Third Edition. 10:15AM
 16 Q What did Scott Wells tell you?
 17 A Dr. Wells was mainly involved, to my knowledge, on
 18 the modeling of Lake Tenkiller and he -- the primary
 19 bit of information he gave me was the -- was oxygen
 20 requirements, which made -- I ended up not using as 10:15AM
 21 part of this report, but primarily Dr. Cooke and
 22 Welch -- Drs. Cooke and Welch were working with Dr.
 23 Wells so I was mainly dealing with Drs. Cooke and
 24 Welch.
 25 Q We'll get into it with greater particularity later 10:16AM

12 (Pages 42 to 45)

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1 in the day, but do you agree with me that there is no 10:16AM
 2 dissolved oxygen problem with Lake Tenkiller?
 3 A Do I agree that there's no dissolved oxygen
 4 problem?
 5 Q Yes, sir. 10:16AM
 6 A No.
 7 Q All right. We can address that at the time. What
 8 did Dr. Engel tell you?
 9 A Dr. Engel was responsible for the watershed
 10 modeling and rivering portions, so Dr. Engel, 10:16AM
 11 basically, talking about different remedial options and
 12 how he could put together those options in the model
 13 primarily with respect to the phosphorus and what
 14 different scenarios would end up doing with respect to
 15 phosphorus loading to the river watershed. 10:17AM
 16 Q Is he the one that told you there needed to be a
 17 moratorium on spreading chicken litter before any of
 18 these remedial measures could be effective?
 19 A Certainly he generated the analysis that the
 20 moratorium is necessary in order to overcome the 10:17AM
 21 historic application of chicken -- or poultry waste.
 22 Q Did you make any independent assessment, Todd
 23 King, of whether there needed to be a moratorium on the
 24 land application of chicken litter for any of these
 25 remedial measures to become effective? 10:17AM

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1 A Based on the results of the studies that have been 10:17AM
 2 done, in my opinion, the moratorium is required to
 3 remediate the site, yes.
 4 Q And that's based on studies of other people?
 5 A It's based upon the body of what I considered. 10:18AM
 6 Q You didn't conduct your own independent analysis?
 7 A No.
 8 Q What did Dr. Jan Stevenson say to you?
 9 A Primarily they're talking about the rivering
 10 environment, the aquatic -- potential for aquatic 10:18AM
 11 improvements, remedial measures, biota injuries.
 12 Q Did you have access to any of the draft reports
 13 that eventually became final reports of any of these
 14 people with whom you spoke before you issued your
 15 report? 10:18AM
 16 A I saw parts of Dr. Cooke and Welch's report. I
 17 think I saw parts of Dr. Engel's report.
 18 Q Any others?
 19 A Not that come to mind.
 20 Q When in relation to May 15 of this year would you 10:19AM
 21 have seen a Cooke and Welch draft?
 22 A The draft would have been -- I'm confused between
 23 when I saw doctor -- if I saw Dr. Cooke and Welch's
 24 before or after, and then I definitely saw parts of
 25 Dr. Engel's about a month before. And I saw some 10:19AM

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1 output from Dr. Wells' model in the weeks before May 10:19AM
 2 15.
 3 Q How would we be able to see exactly what it was
 4 that you saw in regard to the Wells model output in the
 5 weeks prior to May 15? 10:20AM
 6 A I believe that was all turned over as part of the
 7 e-mail record.
 8 Q Okay. I've always understood the word "rivering"
 9 to describe that area of transition between river and
 10 lake at the top of the lake, am I wrong about that? 10:20AM
 11 A I believe the way I used it was to describe the
 12 upstream from that point.
 13 Q So you're using rivering to describe the entire
 14 main system of the river?
 15 A Yes, sir. 10:20AM
 16 Q What did Dr. Butler tell you, Mr. Dan Butler?
 17 A Dan and Shannon Phillips were talking about mainly
 18 best management practices and things that they've done
 19 as part of the Oklahoma Conservation Commission, that
 20 might be useful in terms of considering for the 10:21AM
 21 Illinois River Watershed.
 22 Q What did they say to you?
 23 A They referred me to some records that they had
 24 conducted or studies they had done for Peacheater Creek
 25 and some other work that they put up on their Website. 10:21AM

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1 Q What was the other work on their Website? 10:21AM
 2 A I don't recall specifically.
 3 Q What did they tell you about Peacheater Creek?
 4 A They were just talking about the demonstration
 5 project and it was kind of a dual watershed study and 10:22AM
 6 what they thought the effectiveness of some of the best
 7 management practices were. They gave me insight into
 8 kind of the cattle practices and some of the things
 9 they've done to improve cattle management.
 10 Q In the Peacheater Creek watershed? 10:22AM
 11 A I believe so, yeah.
 12 Q And --
 13 A In general as well.
 14 Q What did they tell you about BMP's effectiveness?
 15 What specifically about BMP did they address and what 10:22AM
 16 did they tell you about their effectiveness?
 17 A Well, the study actually has several BMPs all
 18 being executed at the same time, so you can't really
 19 pull out the effectiveness of any particular BMP. I
 20 had to go to other sources for that, but overall, the 10:22AM
 21 practices there were just descriptions relative to the
 22 feeding practices, the grazing practices of cattle and
 23 watering practices and some of the things they had done
 24 in terms of breaking up pastures so that the cattle fed
 25 more evenly. Some of the improvements they made to 10:23AM

13 (Pages 46 to 49)

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1 feeding operations and the newer handling to prevent 10:23AM
 2 runoff.
 3 Q From cattle operations?
 4 A Yes.
 5 Q Cattle manure is a contributing source of 10:23AM
 6 phosphorus in Peacheater Creek Watershed?
 7 MR. BLAKEMORE: Object to form.
 8 A I assume so. I don't recall directly.
 9 Q Well, let's return to BMPs that they were
 10 discussing with you. What specific BMPs were they 10:23AM
 11 touting as being effective?
 12 A I think bank stabilization, vegetative filter
 13 strips, better grazing patterns, improvements to
 14 feeding operations and manure management.
 15 Q What about fencing out cattle out of streams? 10:24AM
 16 A And -- yeah.
 17 Q Is that true?
 18 A Yes.
 19 Q Did they give you any opinions or values as to the
 20 extent of cattle damaging the Peacheater Creek 10:24AM
 21 watershed?
 22 A Not that I recall.
 23 Q Do you know whether there's chicken production in
 24 the Peacheater Creek watershed?
 25 A Not that I recall. I don't recall. 10:25AM

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1 Q It's mainly impacted by cattle rather than 10:25AM
 2 chickens, isn't that true?
 3 A I don't know.
 4 Q In your report, you didn't take cattle management
 5 practices into consideration in terms of remediation 10:25AM
 6 efforts, did you?
 7 A It was one of the things that we considered and
 8 said we need additional information to assess.
 9 Q What did -- anything else that Dan Butler and
 10 Shannon Phillips talk to you about? 10:25AM
 11 A I think that was primarily it.
 12 Q And what did Robert Van Waasbergen say to you?
 13 A Primarily he was the keeper of all the data, so
 14 any of the GIS coverages that I requested he would
 15 have. 10:26AM
 16 Q What GIS coverages did you get from him?
 17 A Mainly the rivers, the aerial extent of the
 18 watershed, chicken house, poultry house densities or
 19 locations, sizes.
 20 Q On Page 3 of your report, in the middle of the 10:26AM
 21 page, you talk about Lake Tenkiller having a
 22 watershed-to-reservoir area ratio of 80?
 23 A Uh-huh.
 24 Q And you then say that the ratio for lakes is often
 25 ten or less? 10:27AM

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1 A Uh-huh. 10:27AM
 2 Q What experience have you had --
 3 MR. McDANIEL: Excuse me. There's a lot
 4 of huh-uhs and mm-hmms so if you could answer yes or
 5 no? 10:27AM
 6 A Oh, yes.
 7 Q What experience have you had in evaluating other
 8 watersheds with ratios of watershed to reservoir area
 9 ratios of 80 or higher?
 10 A I don't know. 10:27AM
 11 Q You don't know or there have been none?
 12 A I don't know. I've not calculated that for the
 13 other watersheds I've worked at.
 14 Q Okay. What was the source of your information
 15 that the ratio for lakes is often ten or less? 10:27AM
 16 A The Cooke and Welch report and book.
 17 Q When Cooke and Welch, in their book or their
 18 5report, were talking about the ratio for lakes is
 19 often ten or less, were they talking about reservoirs
 20 or natural lakes? 10:28AM
 21 A When the ratio is ten or less, they're talking
 22 about natural lakes.
 23 Q Is that what you're talking about when you quote
 24 them on Page 3?
 25 A No, we're saying it's a "reservoir". 10:28AM

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1 Q Okay. So when you use the word "lakes" here, we 10:28AM
 2 can also use the word reservoir?
 3 A Yes, sir.
 4 Q And what did Drs. Cooke and Welch say to you about
 5 the significance of the 80-to-one ratio watershed to 10:28AM
 6 reservoir area ratio of Lake Tenkiller?
 7 A I think it -- we're basically referring to the
 8 amount of sources that are impacting the reservoir, the
 9 area over which it's covered, the amount of influence
 10 is based on precipitation, runoff. It's just things 10:29AM
 11 along those lines, and how the reservoir behaves based
 12 on that.
 13 Q They told you, did they not, that with a ratio of
 14 80, that the opportunity for quick eutrophication after
 15 damming is going to be greater than for a ratio of ten 10:29AM
 16 or less?
 17 MR. BLAKEMORE: Object to the form.
 18 A I don't think we had that specific discussion.
 19 Q That's true, isn't it?
 20 A That? 10:29AM
 21 Q What I just said is true.
 22 MR. BLAKEMORE: Object to the form.
 23 A Could you repeat it, please?
 24 Q Yeah. With a watershed-to-lake surface ratio of
 25 80, there's a greater opportunity for fast 10:30AM

14 (Pages 50 to 53)

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1 eutrophication of the lake than there would be if you 10:30AM
 2 dammed up a stream with a ratio of ten or less?
 3 A I would have to refer to Dr. Cooke and Welch. I
 4 don't think I weigh in on that.
 5 Q Do you have a feel for that at all, that issue? 10:30AM
 6 A Not the way you've posed it.
 7 Q How would you pose it?
 8 A I don't.
 9 MR. BLAKEMORE: Object to the form.
 10 Q You don't what? 10:30AM
 11 A I don't know what -- I'm not understanding where
 12 you're trying to go.
 13 Q Let me take another shot at it. Will you agree
 14 with me that the greater the amount of land surface
 15 that is feeding into a catchment basin, the greater the 10:30AM
 16 opportunity for more stuff to get caught in that
 17 catchment basin?
 18 MR. BLAKEMORE: Object to the form.
 19 A There's a lot of factors in there that I just -- I
 20 can't give you a black or white answer. 10:31AM
 21 Q Well, I guess I'm curious as to why you even went
 22 into this ratio issue in your report.
 23 A I think it was just to give a general nature of
 24 the reservoirs compared to a natural lake.
 25 Q Do you know anything at all about the effect of a 10:31AM

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1 larger watershed-to-reservoir ratio than a smaller one? 10:31AM
 2 A Well, I mean, it goes to how the reservoir and the
 3 system as a whole responds to precipitation events.
 4 And, you know, everything that is land use dependent,
 5 topography dependent. Certainly the larger the 10:32AM
 6 watershed, the more types of land uses, or the more
 7 types of sources are of concern or are potential
 8 contributors to nutrients.
 9 Q Okay.
 10 A And, well, there's shallow lakes versus deep lakes 10:32AM
 11 and natural deep lakes versus natural shallow lakes.
 12 Q Did you define Lake Tenkiller as being a deep
 13 lake?
 14 A Yes.
 15 Q On Page 4. Again, you raise the issue of a 10:33AM
 16 moratorium on land application and the conclusions that
 17 there need to be a moratorium -- or not your
 18 conclusions, but the conclusions of others, is that
 19 true?
 20 MR. BLAKEMORE: Object to form. 10:33AM
 21 A In my opinion, the moratorium is necessary in
 22 order for these other remedial responses to be
 23 effective. In other words, without cessation, the --
 24 there's going to be a limited effectiveness for the
 25 other remedial alternatives to have a meaningful 10:33AM

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1 impact. 10:33AM
 2 Q What would -- if chicken litter was not available
 3 as a fertilizer for cattle farmers in the IRW, what do
 4 you suppose they would do for nutrients?
 5 A Assuming -- I mean, that's kind of beyond my area 10:34AM
 6 of expertise, but I would assume that if the economics
 7 worked out, they would fertilize as necessary to grow
 8 pasture land to feed the cattle.
 9 Q With commercial fertilizer?
 10 A If the economics were there. 10:34AM
 11 Q And what would happen to the phosphorus in
 12 commercial fertilizer land applied if it were applied
 13 immediately prior to a large rain event?
 14 A Certainly that would tend to reduce the
 15 effectiveness of the phosphorus in terms of its desired 10:35AM
 16 purpose and increase the amount of runoff in the
 17 watershed.
 18 Q Have you conducted any investigation into what the
 19 economic impact on the agricultural producers in the
 20 watershed would be if there were a moratorium on the 10:35AM
 21 land application of chicken litter?
 22 A Not beyond what's presented herein.
 23 Q Pardon me?
 24 A I say not beyond what's presented herein,
 25 basically the disposal costs for the poultry waste. 10:35AM

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1 Q You have not taken a look at what it would do to 10:35AM
 2 the personal finances of a 60-acre farm who had cattle,
 3 for instance?
 4 A No.
 5 Q Why would that not be a relevant inquiry on your 10:35AM
 6 part before you simply state that there ought to be a
 7 moratorium?
 8 A I guess in putting together this document, the
 9 primary focus is on, you know, the environmental arm,
 10 the environmental injuries, the broader sociological 10:36AM
 11 and economic context is typically not brought in at
 12 this stage.
 13 Q I thought I saw something in here, though, about,
 14 for instance, rejection of potential remediation
 15 efforts that you deemed would not be effective? 10:36AM
 16 A Based on cost, you mean, or --
 17 Q Based on cost or any other factor.
 18 A I'm sorry?
 19 Q Based on cost or any other factor.
 20 A Right. 10:37AM
 21 Q I mean, there are things you could do that you've
 22 deemed that would be effective, is that true?
 23 A Yes.
 24 Q Okay. And some of those are not based on cost,
 25 you just deemed them to be effective in this setting, 10:37AM

15 (Pages 54 to 57)

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1 is that true? 10:37AM
 2 A Yes, sir.
 3 Q So what is it about a moratorium on the land
 4 application of chicken litter that would be effective
 5 if, in fact, a farmer is going to come on the back side 10:37AM
 6 with commercial fertilizer?
 7 A Well, based on the conceptual site model for the
 8 site, the historic practice of land applying poultry
 9 waste has resulted in an increase in the amount of
 10 phosphorus relative to the amount of nitrogen required 10:37AM
 11 for agronomic purposes, so that there's an excess of
 12 phosphorus in the soils and well beyond what the
 13 agronomic need is, and to continue to apply poultry
 14 waste is going to exacerbate that problem. Whereas, if
 15 the moratorium or cessation was implemented and the 10:38AM
 16 farmer had to bring in commercial fertilizer, they
 17 wouldn't try and bring in phosphorus, they would just
 18 bring in nitrogen supplements.
 19 Q Who says that's what would happen?
 20 A Primarily Dr. Gordon Johnson. 10:38AM
 21 Q Okay. Now, have you -- do you know the number of
 22 acres of pasture land inside the IRW that have never
 23 been soil-tested for phosphorous?
 24 A No, sir.
 25 Q Is that part of your inquiry? 10:38AM

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1 A At one time we were trying to take the existing 10:38AM
 2 soil test phosphorus data and locate it -- geo-locate
 3 it, but that's something that we can't presently do.
 4 Q You just gave up on it?
 5 A Not so much gave up, but we decided to use a 10:39AM
 6 fraction of the soil test phosphorus as a metric to
 7 estimate the overall.
 8 Q Why didn't -- why didn't you do it the other way?
 9 A Why didn't we do it another way? I just -- I
 10 don't believe that the data was geo-located where we 10:39AM
 11 could do it the other way.
 12 Q Just it's not usable?
 13 A I wouldn't say it's not usable, I'd say it's -- we
 14 still used it, it was just making estimates based on
 15 the proportion of results that we had. 10:39AM
 16 Q So as I understand what you did is if you found --
 17 if you found 38 percent of the fields that did have
 18 soil test data available that had over 65 STP, for
 19 instance, you would assume that same percentage would
 20 apply to all the pasture land in the IRW, correct? 10:40AM
 21 A I think the way you said it, yes.
 22 Q Okay. Now, is that accurate?
 23 A I think there are certainly more accurate ways to
 24 do it, but I think it's accurate enough for the
 25 purposes that we were -- at the stage we're at for this 10:40AM

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1 estimate. It's the best information available to make 10:40AM
 2 estimate. It was better than not using the information
 3 available.
 4 Q You understand the Oklahoma regulatory scheme that
 5 governs land application of chicken litter? 10:40AM
 6 A Not to any degree.
 7 Q Well, let me try to take a shot at it, and if
 8 counsel wants to object, he can. That before -- since
 9 1998, before chicken litter could be applied on lands
 10 within the IRW, the receiving pasture has to have -- 10:41AM
 11 has to be tested for phosphorus, do you understand
 12 that?
 13 A Yes, sir.
 14 Q And if you use commercial fertilizer in Oklahoma,
 15 you do not have to test for phosphorus, you understand 10:41AM
 16 that?
 17 A I did not know that.
 18 Q See, you learned something today. Would it not be
 19 true -- would it not be logical that there would be
 20 more soil tests of pastures that were going to receive 10:41AM
 21 chicken litter than there would be soil tests for
 22 pastures that were not going to receive chicken litter?
 23 MR. BLAKEMORE: Object to the form.
 24 A Could you restate it one more time? I'm sorry.
 25 Q Yeah. Let me go at it this way: Do you agree 10:41AM

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1 with me that it would be logical that most of the 10:42AM
 2 pastures that are, in fact, tested for their phosphorus
 3 content would be pastures that were going to receive
 4 chicken litter?
 5 A Yes. 10:42AM
 6 Q All right. And, therefore, it would also be
 7 logical that there are a number of pastures out there
 8 that have never been tested for phosphorus because
 9 they're not going to receive chicken litter?
 10 A Well, my understanding is that, again, based on 10:42AM
 11 discussions with Dr. Johnson, is the soil test
 12 phosphorus number come from a variety of sources and
 13 it's not all tied to -- you know, the particular
 14 regulation you're talking about that other people
 15 submit phosphorus tests for other reasons and this is 10:42AM
 16 all -- I'm not an expert on this.
 17 Q Was there a confab between you and others that
 18 ended in the agreement that you would apply the same
 19 ratio across all pasture land in the watershed as
 20 you've described? 10:43AM
 21 A It's how I chose to approach the problem. You
 22 think it's consistent with what Dr. Johnson did, but
 23 I'm not sure.
 24 Q Now, let's look at Page 4 of your report. I'll
 25 try to move a little quicker. You've assessed human 10:43AM

16 (Pages 58 to 61)

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1 health impacts, Lake Tenkiller impacts and river and 10:43AM
2 stream impacts, correct?

3 A Largely these are the -- basically, the scope of
4 work that I was given to prepare this document, so this
5 is what I had at the start. 10:44AM

6 Q Have you been able to locate one person who has
7 gotten sick from contact with water in the IRW
8 resulting from the land application of chicken litter?

9 MR. BLAKEMORE: Object to the form.

10 A That wouldn't have been within the scope of 10:44AM
11 this -- of my assignment.

12 Q Looking for an actual sick person was not within
13 your scope?

14 A Not in my --

15 Q Have you had discussions with other experts in the 10:44AM
16 case as to whether any of them have found an actual
17 sick person?

18 A Again, no. I don't know why I would have asked
19 that question.

20 Q Why wouldn't you have asked that question? 10:44AM

21 MR. BLAKEMORE: Object to the form, beyond
22 the scope.

23 A I don't know.

24 Q How can there be adverse human health impacts if
25 there are no sick people? 10:44AM

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1 MR. BLAKEMORE: Object to the form. 10:44AM

2 A Well, again, this topic can be probably best
3 addressed by the other experts, but based on my
4 understanding, you know, the purpose of the -- of the
5 remediation is to identify or is to remove potential 10:45AM
6 risk, not necessarily to address, you know, human
7 health outbreak or things along those lines. I mean,
8 this is -- the whole exercise is to identify and
9 remediate those risks before they harm folks.

10 Q Do you know how long people have been recreating 10:45AM
11 the Illinois River?

12 A I assume a long time.

13 Q Can we go back to 100 years to statehood?

14 A I would assume so.

15 Q Have you or your team or anybody at Camp, Dresser 10:45AM
16 and McKee found the name, address and telephone number
17 of one human being who has gotten sick from water body
18 contact in the last 100 years in the IRW?

19 MR. BLAKEMORE: Object to the form.

20 A Again, that wasn't something I was taxed with. 10:46AM

21 MR. McDANIEL: I object as nonresponsive.

22 Q It's an objection, let me press on.

23 A Sorry.

24 Q Have you or your team identified one person who's
25 gotten sick from water body contact in the IRW since 10:46AM

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1 statehood? 10:46AM

2 A I don't know the answer to that question.

3 Q Who told you that cyanobacteria of bluegreen algae
4 in the IRW surface waters was a problem?

5 A Dr. Stevenson, Drs. Cooke and Welch. 10:46AM

6 Q Stevenson, Cooke and Welch?

7 A (Nods head.)

8 Q Anybody else?

9 A Not that I recall.

10 Q What did they tell you about that? 10:46AM

11 A Just that the nature of the bluegreen algae and
12 its toxicity and its adverse impact to taste and odor
13 concerns for drinking water.

14 Q Have they told you -- did they tell you whether
15 there was an actual problem in the IRW, the bluegreen 10:47AM
16 algae?

17 A I don't recall that. I don't recall everything in
18 that conversation directly.

19 Q So the people who you spoke with about this issue
20 were Dr. Stevenson, Dr. Cooke and Dr. Welch, and you 10:47AM

21 have no recall as to whether any of those people --
22 three people have told you whether there's an actual
23 bluegreen algae problem in the IRW, is that true?

24 A To the best I can recall, yeah.

25 Q And who did you discuss disinfection byproducts 10:47AM

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1 and trihalomethanes with and haloacetic acids? 10:48AM

2 A Dr. Cooke, Dr. Welch and Janice Skadsen, another
3 person with CDM that I failed to mention.

4 Q Janice who?

5 A Skadsen. 10:48AM

6 Q Spell that, please.

7 A S-K-A-D-S-E-N.

8 Q What office does she work out of?

9 A Ann Arbor.

10 Q What did she tell you about DVPs, THMs and 10:48AM
11 haloacetic acids?

12 A Just she did some research for me in terms of the
13 costs on the -- to upgrade the water treatment plants.

14 Q She didn't -- she did nothing to you in terms of
15 whether there was an actual problem with DVPs, is that 10:48AM
16 true?

17 A No, not that I recall.

18 Q All right. Now, again, you talked to Cooke, Welch
19 and whom?

20 A For? 10:48AM

21 Q For this issue.

22 A Probably Dr. Olsen as well.

23 Q Did any of those people tell you that there's an
24 actual DVP, THM or HAA5 problem?

25 A Yeah, I guess going back to Dr. Olsen as well for 10:49AM

17 (Pages 62 to 65)

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1 the Cyanobacteria that he mentioned that all of these 10:49AM
 2 issues were demonstrated impacts.
 3 Q Your testimony then is Dr. Olsen told you that
 4 there actually is a bluegreen algae problem in the IRW?
 5 A I believe so, yes. 10:49AM
 6 Q And who, if anybody, told you there was an actual
 7 DVP problem?
 8 A I believe that was Dr. Olsen as well.
 9 Q Did he quantify it for you?
 10 A No. 10:49AM
 11 Q Who told you, if anyone, that there have been
 12 taste and odor complaints for water drawn from the IRW
 13 potable water?
 14 A Dr. Olsen, Dr. Cooke, Dr. Welch.
 15 Q Did you independently conduct your own 10:50AM
 16 investigation at all to determine whether there
 17 actually have been taste and odor complaints?
 18 A No.
 19 Q Can you name the water systems that draw water
 20 from Lake Tenkiller? Is there a chart in your report? 10:50AM
 21 A Yeah.
 22 Q Just wait until we get there then. Just hold that
 23 question.
 24 A Okay.
 25 Q Well, if you continue on Page 4 and on into 10:50AM

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1 Page 5, where you list concerns of -- for the lake and 10:50AM
 2 the rivers and streams, those are all things that were
 3 told to you by other people, is that true?
 4 A Yes, sir.
 5 Q Okay. Look at 2.2.2. Where did you get the 10:51AM
 6 number that there's 3,800 miles of streams in the IRW?
 7 A It's based on the GIS coverage from Robert.
 8 MR. ELROD: Off the record for a second.
 9 (Whereupon, a discussion was held off
 10 the record.) 10:51AM
 11 Q So where do I find Van Waasbergen in 2008?
 12 A It should be in the e-mail record.
 13 Q Now, does that 3,800 miles include first order
 14 streams?
 15 A Yeah, that's all streams. 10:52AM
 16 Q So that would be include -- that would include
 17 intermittent streams, first order?
 18 A If it's on the GIS coverage, it's included. How
 19 the GIS coverage was developed, I don't know.
 20 Q And did you use that number in the development of 10:52AM
 21 some of your cost estimates for mediation further in
 22 your report?
 23 A Yeah, we used the all stream scenario and then
 24 third order plus stream scenario to develop costs.
 25 Q Have you, yourself, been directly involved in 10:53AM

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1 stream gauge records, stream gauge measurements? 10:53AM
 2 A Yes, I have.
 3 Q And I'm referring to 2.2.3. Describe to me the
 4 types of gauges that are available to determine the
 5 flows of the Illinois, Baron Fork and Caney Creek. 10:53AM
 6 A I don't know the specific types of gauges, but I
 7 do believe that these three locations are all gauged by
 8 USGS stations.
 9 Q But you don't know the kind of gauge mechanism
 10 they use? 10:53AM
 11 A No.
 12 Q Will you agree with me that trying to determine
 13 daily flows and flow contributions to a lake like
 14 Tenkiller is an inexact science?
 15 MR. ELROD: Object to the form. 10:54AM
 16 A I mean, I utilized the USGS gauge station data on
 17 a wide variety of analyses and reports.
 18 Q You take it at face value as being true?
 19 A I trust the QA/QCs from what I know of the USGS
 20 protocols and how they manage their data. It's my 10:54AM
 21 opinion it's high quality data.
 22 Q We've had a lot of floods in Northeast Oklahoma in
 23 the last three months.
 24 A Uh-huh.
 25 Q I mean, the kind that take out fences and flood 10:54AM

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1 pastures of the highest order we've ever had. How in 10:54AM
 2 the world do you gauge an event like that?
 3 MR. BLAKEMORE: Object to the form.
 4 A I mean, there are extreme events that obviously
 5 may exceed whatever the gauge was calibrated to. I'm 10:54AM
 6 not sure that the numbers I've utilized have been more
 7 on the average daily flow basis. I'm not sure if those
 8 exceedances, those high infrequent events, would impact
 9 substantially the analysis if there are errors there.
 10 Q In Paragraph 2.3, you -- 10:55AM
 11 A On Page 6?
 12 Q Yes, sir.
 13 A Okay.
 14 Q You appear to limit your analyzes to phosphorus
 15 bacteria total nitrogen, is that true? 10:55AM
 16 A For the purposes of trying to quantify the
 17 different remedial measures, I tried to generalize to
 18 these three forms to facilitate the discussions and
 19 presentation.
 20 Q There's no discussion in here of heavy metals? 10:56AM
 21 A No, sir.
 22 Q And why didn't you address the issue of heavy
 23 metals?
 24 A That wasn't identified as one of the injuries to
 25 me at the get-go. 10:56AM

18 (Pages 66 to 69)

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1 Q Okay. And the person or people who would have 10:56AM
 2 identified those injuries to you would include Roger
 3 Olsen, correct?
 4 A Yes, sir.
 5 Q And who else? 10:56AM
 6 A I'm not sure.
 7 Q All right. None of those people said to you, hey,
 8 Todd, we're having a heavy metal problem in the
 9 Illinois River Valley, isn't that true?
 10 A Not for the purposes of the scope of this 10:56AM
 11 document, no.
 12 Q Well, if there's not -- if there were a problem,
 13 you would have addressed it in terms of the remediation
 14 of that problem, isn't that true?
 15 A Within the scope of the work, which was pretty 10:56AM
 16 much the previous section.
 17 Q And heavy metals were outside the scope of your
 18 work?
 19 A Yes, sir.
 20 Q And they were outside of the scope of your work 10:57AM
 21 because Roger Olsen and others told you that there's no
 22 reason to consider heavy metals?
 23 MR. BLAKEMORE: Object to the form.
 24 A I don't know if I would go that far. They're
 25 outside of the scope, yes. Why they're outside of the 10:57AM

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1 scope, I don't know why. 10:57AM
 2 Q Arsenic is outside the scope?
 3 A Yes, sir.
 4 Q Now, in 2.3.2, you talk about bacteria and you
 5 state that, "The relevant pathway for bacteria is the 10:57AM
 6 precipitation-based transport of bacteria from land
 7 when poultry waste has been applied to groundwater."
 8 A Yes, sir.
 9 Q What about surface water?
 10 A Surface water in terms of? 10:58AM
 11 Q Bacteria. Why didn't you mention surface water?
 12 A Primarily because drinking water supplies that are
 13 connected to surface water disinfect, so that pathway
 14 is kind of addressed through that.
 15 Q So you don't recognize the potential for human 10:58AM
 16 health risks from the ingestion of surface water?
 17 A That wasn't a focus of this report.
 18 Q That was not a focus?
 19 A No.
 20 Q And it -- if it were a problem. You would have 10:59AM
 21 focused on it, true?
 22 A Well, again, cessation would address that within a
 23 year or so, so --
 24 Q Would you tell the court and the jury how the
 25 chicken litter is typically applied to the land for 10:59AM

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1 fertilizer? 10:59AM
 2 A I believe it's cleaned out from the -- again, this
 3 is not based on my personal experience, but I believe
 4 it's cleaned out from the chicken houses and applied as
 5 a dry/semidry manure. 10:59AM
 6 Q Applied in thin layers?
 7 A Spread, yeah.
 8 Q Very thinly?
 9 A Yeah.
 10 Q And do you understand the interconnection between 10:59AM
 11 ultraviolet rays and bacteria die-off rates?
 12 A Yes, sir.
 13 Q Bacteria, in fact, will die off rather quickly
 14 when it's exposed to UV rays, correct?
 15 A If they're exposed, sure. 11:00AM
 16 Q Including rays from the sun?
 17 A Yes, sir.
 18 Q Have you or anybody on your team -- and I mean --
 19 by team, I mean to be as broad as possible -- conducted
 20 any bacteria die-off rates connected with the land 11:00AM
 21 application of chicken litter?
 22 A I don't know the answer to that question.
 23 Q Did you read the testimony and the previous report
 24 of Dr. Herbert Dupont?
 25 A I might of saw part or all of that. I'm not sure. 11:00AM

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1 I can't recall which -- I saw a couple bits and pieces 11:01AM
 2 of expert testimony.
 3 Q Based on what you've seen and know about
 4 Dr. DuPont, does he deserve respect?
 5 A I don't know. I can't recall exactly if that's 11:01AM
 6 even the report. I would have to see it again.
 7 Q You stated in the last paragraph on Page 6, that,
 8 quote, research indicates the bacteria survived months
 9 within the soil and groundwater. And you cite Gerba,
 10 G-E-R-B-A, and that's 1975. 11:01AM
 11 A Uh-huh.
 12 Q Any other source material for that statement other
 13 than somebody named Gerba?
 14 A I think just discussions with Dr. Olsen about some
 15 of the work of some of the other experts, but -- 11:01AM
 16 Q What did Dr. Olsen tell you in that regard?
 17 A Nothing specifically other than that there was
 18 other experts working on the bacteriological aspects.
 19 Q What is the bacterial concern in this case?
 20 A I don't know. 11:02AM
 21 Q The top of the next page, Page 7, you state,
 22 "Without cessation, the remedial action objective for
 23 bacteria is to treat or replace all impact to private
 24 drinking wells within the State of Oklahoma that pose a
 25 risk to human health. CDM estimated that 878 drinking 11:02AM

19 (Pages 70 to 73)

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1 water wells are potentially impacted within the 11:02AM
 2 Oklahoma portion of the IRW. That is based on an
 3 estimated 1,463 groundwater wells within the IRW for
 4 Oklahoma and the finding that 36 of 60 private wells,
 5 sampled by CDM in 2006 and 2007, were reported with 11:03AM
 6 detects of bacteria." My question -- I have a number
 7 of questions about that study -- those statements.
 8 What are the sources of bacteria that were found in the
 9 wells?
 10 A I don't know. 11:03AM
 11 Q How many actual sick people has CDM located who
 12 got sick from drinking well water in the IRW?
 13 A I don't know.
 14 Q Do you know whether they found one person who
 15 became sick from drinking well water in the IRW? 11:03AM
 16 A I did not know.
 17 Q Do you know how many of the wells were impacted by
 18 septic systems?
 19 A No, sir.
 20 Q Do you know how many pathogenic bacteria were 11:03AM
 21 located by CDM in the IRW?
 22 A No, sir.
 23 Q So in order to make the calculations that we're
 24 going to discuss later on about the need to deal with
 25 private drinking wells on the Oklahoma side of the IRW, 11:04AM

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1 your answers to the questions I just asked are I don't 11:04AM
 2 know?
 3 MR. BLAKEMORE: Object to the form.
 4 Q That was a bad question. Do you understand it?
 5 A Yeah. The basis for the estimates, I think we've 11:04AM
 6 clearly stated in the report and it's based on the
 7 sampling that CDM did.
 8 Q Okay. We'll go on then. Paragraph 2.4.3, Lake
 9 Tenkiller, you talk about to restore fish habitat while
 10 remedial measures are implemented, we should maintain a 11:05AM
 11 minimum dissolved oxygen content of five milligrams per
 12 liter at all times?
 13 A Yes, sir.
 14 Q Now, you've got a D.O. chart in the back, don't
 15 you? 11:05AM
 16 A No, sir.
 17 Q Well, I've seen some D.O. charts in your
 18 considered materials, I think.
 19 A Yes.
 20 MR. ELROD: Let's go ahead and take a 11:05AM
 21 break.
 22 THE VIDEOGRAPHER: We are now off the
 23 record. The time is now 11:06 a.m.
 24 (Following a short recess, proceedings
 25 continued on the record.) 11:14AM

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1 THE VIDEOGRAPHER: We are back on the 11:14AM
 2 record. The time is now 11:15 a.m.
 3 Q Mr. King, I hand you what's been marked as King
 4 Exhibit No. 3.
 5 MR. McDANIEL: Was the report marked as 11:15AM
 6 Number 2?
 7 MR. ELROD: Yeah, 2 is the report.
 8 Q This is from your considered material so I hope
 9 you can help me with it. This appears to show D.O.
 10 levels in Lake Tenkiller compared with extrapolated 11:15AM
 11 moratorium on P loading D.O. levels, is that fair?
 12 A Yes, sir.
 13 Q And was this prepared by Dr. Engel?
 14 A No, this is Dr. Wells, I believe.
 15 Q All right. So Dr. Wells -- just so the record 11:15AM
 16 will be complete, Dr. Wells has modeled Lake Tenkiller,
 17 is that true?
 18 A Yes, sir.
 19 Q And do you understand Base Case to be actual
 20 measurements? 11:15AM
 21 A Based on the period of record that Dr. Engel used,
 22 yeah.
 23 Q And -- Dr. Wells or Dr. Engel?
 24 A Dr. Engel provided the watershed model that fed
 25 into Dr. Wells' model. 11:16AM

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1 Q Okay. So the temporal control over the wells 11:16AM
 2 modeling effort was controlled by Dr. Engel's model?
 3 A I believe they both used the same period of time
 4 for calibration.
 5 Q Now, back to our previous discussion, you stated 11:16AM
 6 on Page 8 of your report that the goal was to maintain
 7 a minimum dissolved oxygen content of five milligrams
 8 per liter at all times on Lake Tenkiller?
 9 A Yes, sir.
 10 Q Now, are we apples and apples here of these bar 11:16AM
 11 charts, milligrams per liter?
 12 A Yes, sir.
 13 Q And do you see anywhere on the first chart from
 14 '95 to clear on out to 2000 -- well, let's go to
 15 reality, '95 to 2005, do you see any point where the 11:17AM
 16 D.O. levels at LK04 dropped below five?
 17 A No, sir.
 18 Q Same question regarding LK03, do you see anywhere
 19 between '95 and the present where the D.O. level
 20 dropped below .5 or 5? 11:17AM
 21 A No.
 22 Q Same question with regard to sampling site LK02.
 23 A No.
 24 Q No is the answer, correct?
 25 A Correct. 11:17AM

20 (Pages 74 to 77)

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1 Q And same question with regard to sampling site 11:17AM
 2 LK01, do you see the D.O. level at any point dropping
 3 below five?
 4 A No, sir.
 5 Q So in regard to dissolved oxygen levels in Lake 11:17AM
 6 Tenkiller, the goal of remediation has already been
 7 met, true?
 8 A No, sir. I believe that this -- this is a draft
 9 document that was provided when Dr. Wells was still
 10 actively calibrating the model. 11:18AM
 11 Q King No. 3 is?
 12 A Yes, sir. I don't think this is reflective of his
 13 final report.
 14 Q Well, if Base Case -- if it's true that Base Case
 15 is the actual -- or the ample numbers, then are you -- 11:18AM
 16 strike all that. That's terrible.
 17 Are you telling me that -- that the Wells
 18 report has changed from what we see in King No. 3?
 19 A I don't know specifically if -- what or if
 20 anything has changed, but I do know that based on 11:18AM
 21 Dr. Cooke and Dr. Welch and Dr. Wells' work that there
 22 are periods of time when the D.O. in Lake Tenkiller
 23 goes below five parts per million or my five milligrams
 24 per liter.
 25 Q So the record will be complete, one of the -- a 11:18AM

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1 couple of the things that are important about the D.O., 11:18AM
 2 Number 1, it's important for fish, right?
 3 A Yes, sir.
 4 Q And are you aware that Lake Tenkiller has been
 5 deemed by Field and Stream magazine as one of the top 11:19AM
 6 ten fisheries in the United States of America?
 7 MR. BLAKEMORE: Object to the form.
 8 A I wasn't aware of that.
 9 Q Would that be important information for you to
 10 know? 11:19AM
 11 A Again, I believe what we're talking about here is,
 12 you know, there's different species of fish and while
 13 some fish may be tolerant of low D.O. conditions, and
 14 thus the lake gets the label of top fishery, there are
 15 other species of fish that aren't so tolerant, but that 11:19AM
 16 in the absence of the injury could support, you know,
 17 those type of fish and should support those types of
 18 fish, so --
 19 Q The other reason or another reason why D.O. levels
 20 may be important in the context of this litigation is 11:19AM
 21 that the metabolism of algae at certain levels will
 22 substantially diminish the D.O. levels in the water, is
 23 that true?
 24 MR. BLAKEMORE: Object to the form.
 25 Q Did I say that right? 11:20AM

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1 A I believe that the presence of algae has an impact 11:20AM
 2 on dissolved oxygen content, but I'm not an expert in
 3 that.
 4 Q Has a negative impact?
 5 A It depends what time of day, yes. 11:20AM
 6 Q So it would follow, would it not, Mr. King, that
 7 if D.O. levels are, my word, good, that there is not an
 8 algae impact problem?
 9 A I don't know that the two are necessarily
 10 correlated quite as strongly as you state it there. 11:20AM
 11 Q But there is a correlation?
 12 A I believe there's a correlation, sure.
 13 Q Now, on Paragraph 3.1, discussed the methodology
 14 for evaluation of your potential remediation, is that
 15 fair? 11:21AM
 16 A Sure.
 17 Q Okay. And one of the words you use is in the
 18 second paragraph, fourth line down, is implementable.
 19 A Uh-huh.
 20 Q So is what you're saying that if it's impossible 11:21AM
 21 to implement, then there's no reason to discuss it
 22 further?
 23 A Yes.
 24 Q And you also use the word "effective"?
 25 A Yes. 11:22AM

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1 Q So if it's not going to be effective, there's no 11:22AM
 2 reason to discuss it further, correct?
 3 A Yes. These would be screening criteria that we
 4 would apply to eliminate technology.
 5 Q Yes, sir. Because that would be a waste of money? 11:22AM
 6 A Yes, sir.
 7 Q And effort?
 8 A Yes, sir.
 9 Q Have you ever heard of a hormone called Estradiol?
 10 MR. McDANIEL: Estradiol. 11:22AM
 11 Q Estradiol?
 12 A I've heard of it.
 13 Q Huh?
 14 A I've heard of it.
 15 Q Have you heard of it in the context of this 11:22AM
 16 lawsuit?
 17 A Not that comes to mind, no. Perhaps as one of the
 18 things that was investigated, but again --
 19 Q But the --
 20 A -- I vaguely recall. 11:22AM
 21 Q The remediation of Estradiol is not -- you were
 22 not tasked with discussing that issue, were you?
 23 A No, sir.
 24 Q It was not within the scope of your work?
 25 A Correct. 11:23AM

21 (Pages 78 to 81)

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1 Q You also begin talking here about the notion of 11:23AM
 2 the -- of additional investigations or assessments.
 3 Have you been told that this court will permit you to
 4 continue your work and to amend this report?
 5 A No, sir. 11:23AM
 6 Q Where did the whole notion of the possibility of
 7 conducting additional investigations in this case come
 8 from?
 9 A Well, I think there were technologies that as we
 10 were going through it, there were various data gaps 11:23AM
 11 that we just couldn't bring it to the same levels as
 12 these other technologies in terms of our analysis, so
 13 we would make notes of those technologies and offer up
 14 that they could be significant if we filled those data
 15 gaps and they could be -- 11:24AM
 16 Q So is it true then that when we get to the section
 17 of potential remedial methodologies, that you say
 18 require additional investigation or assessment, they
 19 are so categorized because there was insufficient data
 20 in the record for you to give consideration to those? 11:24AM
 21 A Yes, sir.
 22 Q All right. In the third paragraph under 3.1, you
 23 discuss continued land application or a moratorium and
 24 you state in the record -- in your report that without
 25 cessation of land application, in your words, "The cost 11:24AM

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1 associated with implementation of evaluated 11:25AM
 2 technologies would overwhelm any benefits in reducing
 3 the injuries, but that technologies would address." Is
 4 that your conclusion or somebody else's conclusion?
 5 A That's my conclusion based on Dr. Engel's 11:25AM
 6 analysis, yeah.
 7 Q So you're taking at face value Dr. Engels' report?
 8 You're accepting it as true?
 9 A I am relying on the analysis that he did, yeah.
 10 Q Okay. Including his modeling activities? 11:25AM
 11 A Yes, sir.
 12 Q And did he calibrate his model?
 13 A I believe so, yes, sir.
 14 Q Will you agree with me that in order to achieve
 15 acceptability within the scientific community, that a 11:26AM
 16 model has to be calibrated?
 17 A Yes, sir.
 18 Q Okay.
 19 A As I understand the term as a non-modeling expert.
 20 Q If you would look, please, at 3.2.1 on Page 11. 11:26AM
 21 Says, "The watershed response region includes lands
 22 where poultry waste has been applied," correct?
 23 A Uh-huh.
 24 Q It also includes lands where poultry waste has not
 25 been applied, is that true? 11:27AM

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1 A Yes, sir. 11:27AM
 2 Q And contained within the IRW as potential sources
 3 of phosphorus, will you agree, would include POTWs?
 4 A Yes, sir.
 5 Q Cattle? 11:27AM
 6 A Yes, sir.
 7 Q Urban runoff?
 8 A Yes, sir.
 9 Q Septic tanks?
 10 A Yes, sir. 11:27AM
 11 Q Wildlife?
 12 A Yes, sir.
 13 Q Under the Paragraph 3.2.1.1, removal, the last
 14 sentence is, "Poultry waste should be managed in
 15 accordance with applicable laws and regulations and not 11:27AM
 16 allowed to negatively impact human health or the
 17 environment within or outside the IRW." Do you see
 18 that, sir?
 19 A Yes, sir.
 20 Q Poultry waste is, in fact, managed in accordance 11:28AM
 21 with applicable laws and regulations, is it not?
 22 MR. BLAKEMORE: Objection to the form.
 23 A I don't -- I don't know.
 24 Q Well, do you know that there are rules and
 25 regulations imposed by the State of Oklahoma on the 11:28AM

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1 land application of chicken litter? 11:28AM
 2 A Yes, sir.
 3 Q Do you have any information that chicken litter is
 4 not being managed in accordance with those rules and
 5 regulations? 11:28AM
 6 A Not me specifically, no.
 7 Q Has anybody on your team, and that word is used
 8 broadly, told you that chicken litter in Oklahoma is
 9 not being managed in accordance with the applicable
 10 laws and regulations? 11:28AM
 11 A Not that I know of.
 12 Q I'd like to discuss buffer strips with you for a
 13 few minutes.
 14 A Uh-huh.
 15 Q Now, you get into those methodologies in greater 11:29AM
 16 particularity on further in your report, don't you?
 17 A Those that are retained, yes.
 18 Q Okay. Let's wait until we get there then.
 19 A Okay.
 20 Q Let's look at Page 13 where you talk about crop 11:29AM
 21 and nutrient management with nitrogen supplementation?
 22 A Uh-huh.
 23 Q You said, "Requires additional investigation and
 24 assessment." What is it you're suggesting might be
 25 done there? 11:29AM

22 (Pages 82 to 85)

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1 A The basic point here is to manage crop growth. In 11:30AM
 2 other words, to remediate the phosphorus within the
 3 soil. That's it in a nutshell.
 4 Q And that would require the cooperation, voluntary
 5 cooperation of thousands of property owners, is that 11:30AM
 6 true?
 7 A Yes, sir.
 8 Q And --
 9 A To be effective, yeah.
 10 Q To be effective. How would you go about doing 11:30AM
 11 that? How does anybody tell thousands of property
 12 owners what they can and can't do in regard to crop and
 13 nutrient management with nitrogen supplementation?
 14 A Again, I believe in order -- the effectiveness of
 15 this -- of this technology would largely depend on the 11:30AM
 16 answers to -- the answer to that question is how would
 17 we get participation from the community that we're
 18 trying to get participation from so -- and that's one
 19 of the data gaps that exists with this technology.
 20 Q That's not only a data gap, that's a philosophical 11:31AM
 21 problem, too, isn't it, in terms of government?
 22 A I suppose so, yes, sir.
 23 Q And same question with regard to buffer strips.
 24 A Uh-huh.
 25 Q How would -- will you agree with me that at least 11:31AM

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1 for all -- I'm trying to think about state owned and 11:31AM
 2 controlled land, federally owned and controlled. And
 3 will you agree with me that for virtually all of the
 4 third order and above streams, that it's private
 5 property owners who own the riparian rights? 11:31AM
 6 A Based on a limited knowledge, yes, I agree with
 7 you.
 8 Q So how does one go about requiring a private
 9 property owner to place a 100-foot vegetative buffer
 10 strip on his or her property in the United States of 11:32AM
 11 America?
 12 A For the purpose of this report, we developed a
 13 land acquisition cost, basically an easement, that we
 14 would pay for the landowner to inquire the rights to
 15 that particular area. 11:32AM
 16 Q Okay. We'll get into that very particular area,
 17 but what if he says I don't even want to talk to you,
 18 get off my land?
 19 A Uh-huh. Obviously, that parcel would not be a
 20 candidate and any effectiveness or any phosphorus 11:32AM
 21 reduction from that parcel wouldn't be available to us
 22 as part of the overall remediation.
 23 Q Same thing with bank stabilization. How do you
 24 force a private property owner to do what they ought to
 25 be doing in terms of bank stabilization? 11:33AM

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1 A Well, again, we tried to -- another property or 11:33AM
 2 other areas or other projects, we tried to build in
 3 incentives to do the environmentally right thing, but
 4 the goal is to remediate the injury, so --
 5 Q Where would you construct a constructed wetland in 11:33AM
 6 the IRW?
 7 A I think the use of constructive wetlands would be
 8 limited and that's another one of the data gaps is to
 9 where there might be areas where a constructed wetland
 10 would even be feasible or provide much use. 11:34AM
 11 Q On Page 16 you talk about the potential
 12 re-impoundment of Lake Francis?
 13 A Yes, sir.
 14 Q You know that there's still a dam there?
 15 A Partial, yeah. 11:34AM
 16 Q Do you know how much former lake bed is exposed?
 17 A I didn't look into it to that level specificity.
 18 Q But you do quote Brian Haggard in terms of
 19 discussing the potential for the now exposed sediment
 20 in the former lake bed of Lake Francis being 11:35AM
 21 re-suspended during massive flooding, is that true?
 22 A I don't recall that. I think I was focused more
 23 on the valuable P versus the total P when I cited that
 24 report.
 25 Q Do you know enough about Lake Francis to be able 11:35AM

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1 to tell us whether its sediment contains 50 years worth 11:35AM
 2 of impact from upstream POTWs?
 3 A No, I don't know enough about the sediment to
 4 discuss that.
 5 Q In Paragraph 3.2.3 you state that -- on Page 17, 11:36AM
 6 you state that, "In addition, the sediments in Lake
 7 Tenkiller contain excessive amounts of nutrients," and
 8 you go to state that, "The release of these nutrients,
 9 particularly phosphorous, protects the excess
 10 production of algae." Who told you that? 11:36AM
 11 A I'm sorry, where?
 12 Q I'm at 3.2.3 on Page 17. It's the last two
 13 sentences in the middle paragraph -- or the second
 14 paragraph.
 15 A Primarily Drs. Welch and Cooke. 11:36AM
 16 Q The statement we just read is not the result of
 17 your own independent investigation, is that true?
 18 A No.
 19 Q On Page 19, you talk about the next to the last
 20 paragraph, hypolimnetic withdrawal -- 11:37AM
 21 A Uh-huh.
 22 Q -- as being a lake restoration technique, do you
 23 see that?
 24 A Yes, sir.
 25 Q And the hypolimnion is the lowest strata in the 11:37AM

23 (Pages 86 to 89)

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1 lake, is that true? 11:37AM
 2 A Yes, sir.
 3 Q It's the bottom water?
 4 A Yes, sir.
 5 Q What is it that you're saying that hypolimnetic 11:38AM
 6 withdrawal can accomplish?
 7 A Well, according to Dr. Cooke and Welch, that the
 8 phosphorus will tend -- when the lake is stratified,
 9 the phosphorus will tend to predominate the hypolimnion
 10 so that if you take your draw from that area, on a mass 11:38AM
 11 balance basis, you remove more phosphorus than you
 12 would if you were, say, taking it from the upper
 13 reaches of the lake.
 14 Q So you're saying that Cooke and Welch say that
 15 phosphorus in the lake tends to reside in the 11:38AM
 16 hypolimnion?
 17 A Reached during certain times of the year, yeah.
 18 Q Did you visit the dam when you were at Lake
 19 Tenkiller yesterday, last night?
 20 A Drove across the top, yeah. 11:38AM
 21 Q Did you see the hydroelectric station?
 22 A Yes, sir.
 23 Q And the water that's used to generate electricity
 24 is hypolimnetic water, is it not?
 25 A That's my understanding, yes. 11:39AM

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1 Q So do you know how much water at the dam site goes 11:39AM
 2 through the powerhouse as opposed to over the top of
 3 the spillways?
 4 A No, I don't know that, but I assume most of it
 5 goes through the powerhouse. 11:39AM
 6 Q The powerhouse. And you'll agree with me that
 7 there is a stretch of river approximately ten miles in
 8 length below the dam, is that true?
 9 A To the best of my knowledge.
 10 Q Did you see a lot of fishing activities there when 11:39AM
 11 you were present?
 12 A It was late in the day, I wasn't -- I didn't
 13 notice, but certainly there were access points all
 14 over.
 15 Q So let me just make sure I understand the 11:39AM
 16 following concept and see whether you agree with it,
 17 that other than evaporation, loss through evaporation,
 18 it would be true that if the lake is going to maintain
 19 the same level, the amount of water going out other
 20 than evaporation, has got to be the same amount of 11:40AM
 21 water coming in?
 22 A There's losses through the dam and there's losses
 23 through groundwater, but those two caveats, yeah.
 24 Q And there is some phosphorus content in the water
 25 coming into the lake, true? 11:40AM

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1 A Yes, sir. 11:40AM
 2 Q And that phosphorus will tend to settle towards
 3 the bottom of the lake during certain times of the
 4 year, true?
 5 A That's my understanding. 11:40AM
 6 Q And if you remove water from the lake via the
 7 powerhouse, that water is being drawn from the most
 8 phosphorus-rich water in the lake, true?
 9 A That's my understanding.
 10 Q Yeah. Okay. Talk to you for a few minutes about 11:40AM
 11 layered aeration on Page 20.
 12 A Uh-huh.
 13 Q Let me see if I can -- well, you tell me what
 14 you're talking about.
 15 A Basically, what we're talking about here is 11:41AM
 16 providing dissolved oxygen for that portion of the lake
 17 where the D.O. goes below five ppm for certain portions
 18 of the year, via mechanical means.
 19 Q So this is an aeration concept in order to raise
 20 the D.O. level of the lake? 11:41AM
 21 A Yes, sir.
 22 Q Has nothing to do with sealing phosphorus at the
 23 bottom?
 24 A I think that's an added benefit, but primarily
 25 it's to create habitat so the fish -- 11:42AM

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1 Q Okay. There is that technology, correct, that -- 11:42AM
 2 let's go back to alum treatment of lakes.
 3 A Uh-huh.
 4 Q The notion of alum treatment is that the aluminum
 5 sulphate -- 11:42AM
 6 A Mm-hmm.
 7 Q -- will seal the phosphorus at the bottom of the
 8 lake and prevent it from reemerging during lake
 9 turnover and feeding algae, true?
 10 A The general principle is the alum sequesters the 11:42AM
 11 phosphorus, reacts with it and drops it out.
 12 Q Okay. You said it a lot better than I did. Now,
 13 the notion of layered aeration is that -- is that the
 14 introduction of oxygen at the bottom of the lake can
 15 have the same effect on sealing phosphorus at the 11:42AM
 16 bottom of the lake as alum can, is that true?
 17 A With a different mechanism. There's that
 18 potential that when you create an oxic condition,
 19 oxygen is present, that it -- it helps keep the
 20 phosphorus maintained within the sediment, but because 11:43AM
 21 the sediment is such a thin layer, the oxygen can be
 22 taken up in a relatively thin layer so it's less
 23 effective than alum.
 24 Q Have you -- have you been involved in any project
 25 where that's actually done? 11:43AM

24 (Pages 90 to 93)

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1 A Which? 11:43AM
 2 Q The layered aeration being utilized to seal
 3 phosphorus at the bottom of the lake?
 4 A No. I mean, I'm relying on Drs. Cooke and Welch.
 5 Q But there's -- there are actually pieces of 11:43AM
 6 equipment and stuff, the machinery, that is used to do
 7 this sort of work, isn't there?
 8 A There's aeration equipment, yes.
 9 Q Did you investigate the cost of using that in this
 10 report? 11:43AM
 11 A Not as part of this report, no.
 12 Q And why did you not?
 13 A I think primarily here it was more of the real
 14 usefulness of the layered aeration was to create
 15 habitat as opposed to remediate the phosphorus so it 11:44AM
 16 kind of fell outside of the scope on that basis.
 17 Q Do you agree with me that the -- that what your
 18 goal should be is least cost-effectiveness?
 19 A Yes, sir.
 20 Q Okay. 4.3.1, Cessation of Land Application Within 11:44AM
 21 the IRW, do you recognize that the plaintiff in this
 22 case is the State of Oklahoma, at least one of them?
 23 A Yes, sir.
 24 Q And do you understand and recognize that the State
 25 of Oklahoma passes laws and rules and regulations? 11:45AM

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1 A Yes, sir. 11:45AM
 2 Q Do you know of any reason why the State of
 3 Oklahoma, which has sued my client in this case, lacks
 4 the power to cease the land application of chicken
 5 litter right now if it chose to do so? 11:45AM
 6 A I don't know, sir.
 7 Q It does, doesn't it?
 8 A I don't know, sir.
 9 MR. ELROD: Object.
 10 A I don't know, sir. 11:45AM
 11 Q It's a government, right?
 12 A Yes, sir.
 13 Q And it makes laws, doesn't it?
 14 A Yes, sir.
 15 Q And we're bound to follow those laws, aren't we? 11:45AM
 16 A Yes, sir.
 17 MR. ELROD: Are you all ready for a lunch
 18 break?
 19 MR. BLAKEMORE: Okay.
 20 THE VIDEOGRAPHER: We are now off the 11:46AM
 21 record. The time is now 11:46 a.m.
 22 (Following a short recess, proceedings
 23 continued on the record.)
 24 THE VIDEOGRAPHER: We are back on the
 25 record. The time is now 1:10 p.m. 1:09PM

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1 Q Mr. King, I'm on Page 23. And, again, I think 1:09PM
 2 I've asked this question before but I may not have
 3 asked this specific question. To your knowledge, has
 4 anybody on your team, meaning broadly, conducted a
 5 bacteria die-off study relative to the die-off rate of 1:10PM
 6 bacteria in land-applied chicken litter?
 7 A Not that I'm aware of.
 8 Q At the bottom of Page 23, when you talk about
 9 compliance with potentially-applicable legal
 10 requirements, you're talking about liquid or solid 1:11PM
 11 waste, is that true?
 12 A I think it's just a generic statement that this
 13 particular technology doesn't really pose any problems
 14 with respect to the legal issues.
 15 Q You're talking about landfilling chicken litter? 1:11PM
 16 A Yes.
 17 Q And you conducted no independent investigation of
 18 the cost of doing that and you accepted our numbers
 19 that were given at the PI hearing of \$35 a time?
 20 A I looked at some of the costs associated with 1:11PM
 21 that, but the numbers you -- that were developed were
 22 similar to the numbers I was coming up with, so I used
 23 yours.
 24 Q Now, at the middle of Page 24, you give an annual
 25 cost estimate of \$16 million. How did you arrive at 1:11PM

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1 that number? 1:11PM
 2 A Based on the total tons of poultry waste
 3 generated. And I think I used a central point for all
 4 the farms going to a particular landfill.
 5 Q Cherokee? 1:12PM
 6 A I can't recall which one.
 7 Q It will tell us on in the report?
 8 A I'm not sure.
 9 Q Did you use \$350,000 ton -- 350,000 tons produced
 10 per year as your number? 1:12PM
 11 A 354,000 tons per year, yes.
 12 Q So if I multiply 354,000 tons times \$35 a ton, I
 13 get \$16,000,000?
 14 A After applying contingencies and --
 15 Q And where do -- okay. 1:12PM
 16 A Table 1.
 17 Q Yeah. All right. And the contingency is 30
 18 percent?
 19 A Yes.
 20 Q Why is it that high? 1:13PM
 21 A Based on the preliminary nature of the study and
 22 where we're at. It's -- 30 percent is kind of a
 23 typical number we use for CERCLA.
 24 THE REPORTER: I'm sorry, use for?
 25 A CERCLA, C-E-R-C-L-A. 1:13PM

25 (Pages 94 to 97)

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1 Q So your use of the word "preliminary" indicates to 1:13PM
 2 me you've not reached a final number yet, is that true?
 3 A Well, as these studies progress, more and more
 4 information is known and the advanced conceptual design
 5 becomes more concrete and more detail is provided, so 1:13PM
 6 as the level of design increases, the level of
 7 contingency decreases.
 8 Q Have you computed an error rate in these numbers?
 9 A No, sir.
 10 Q Is there an error rate? 1:13PM
 11 A Yes, sir.
 12 Q And you don't know what that is?
 13 A No, sir.
 14 Q Now, is it your testimony that you intend to do
 15 further work? 1:14PM
 16 A No, sir -- well, I guess in terms of error rate, a
 17 typical error for feasibility studies is minus 30 and
 18 plus 50 percent. I'd say this error rate is at --
 19 right around that area.
 20 Q How do you know that? 1:14PM
 21 A Based on my experience and best professional
 22 judgment, the cost developed at that stage are
 23 generally, you know, to that degree of accuracy. The
 24 other important point of all cost estimating is -- at
 25 this stage, the key thing is not so much the absolute 1:14PM

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1 cost as it is the relative ranking because we're using 1:14PM
 2 these costs as one of the criteria, not the sole
 3 criteria. So it's important that the cost basis for
 4 each of the alternatives is consistent, not so much
 5 what the ultimate number -- 1:15PM
 6 Q Okay.
 7 A -- is.
 8 Q I think I understand your testimony. But you do
 9 not intend to do further refining work, right?
 10 A Not at this time, no. 1:15PM
 11 Q So on your summary of costs for remedial
 12 alternatives of the Illinois watershed, which is an
 13 appendix to your report, you say, "Preliminary cost
 14 estimate for all remedial alternatives"?
 15 A Uh-huh. 1:15PM
 16 Q That would tell me that that is not intended to be
 17 a final cost estimate, is that true?
 18 A No, sir -- I mean, yes, sir.
 19 Q Is it true that that's --
 20 A Yes. 1:15PM
 21 Q I am correct?
 22 A Yes, sir.
 23 Q And you computed a total present worth cost over
 24 30 years at \$200,000,000, is that right?
 25 A Yes, sir. 1:16PM

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1 Q What discount rate did you use? 1:16PM
 2 A Seven percent.
 3 Q Where did you -- what did you do to verify that
 4 that's an appropriate discount rate?
 5 A I used the EPA standard guidance. 1:16PM
 6 Q So is there an EPA document that you looked to for
 7 guidance in the computation of all of these numbers?
 8 A No, they came from a variety of sources.
 9 Q How would I be able to reconstruct the sources
 10 that you used for each of these estimates as we work 1:16PM
 11 our way through the report?
 12 A I tried to cite the source in the comment section.
 13 Q Which is found where?
 14 A In that table that we're referring to. The
 15 various tables next to the cost. 1:17PM
 16 Q Okay. And your tables at the back under the
 17 comment section, is that what you're talking about?
 18 A Yes, sir.
 19 Q So do each of these comment sections contain the
 20 total to contain all of the sources of the underlying 1:17PM
 21 information?
 22 A Between the text of the report and the comments,
 23 that was my intent, yeah.
 24 Q Okay. Now, when we get to 4.3.2, Buffer Strips,
 25 you talk about modeling? 1:18PM

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1 A Uh-huh. 1:18PM
 2 Q Are you telling me that there was a modeling
 3 function applicable to the effectiveness of buffer
 4 strips in this case?
 5 A Dr. Engel and I discussed two scenarios. One is 1:18PM
 6 the all stream scenario and one is the third order and
 7 above stream scenario, that he input into the model and
 8 ran.
 9 Q So when you're talking about models in this
 10 section of your report, you're talking simply about Dr. 1:18PM
 11 Engel's model and the input for that model?
 12 A Yes, sir.
 13 Q You're not talking about having conducted a
 14 separate modeling process applicable only to vegetative
 15 strips? 1:19PM
 16 A Yes, sir.
 17 Q On Page 25, the next to the last paragraph, have
 18 you ever designed a buffer strip yourself?
 19 A I worked on the design of Kalamazoo River setback
 20 for the time critical removal action that we're 1:19PM
 21 currently doing.
 22 Q What is the time critical removal action?
 23 A Oh, CERCLA term of just, basically, the form of
 24 the order that it was conducted under.
 25 Q You have an estimate of 84,927 acres necessary to 1:20PM

26 (Pages 98 to 101)

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<p>1 place 100-foot buffer strips on both sides of streams 1:20PM</p> <p>2 and rivers for all streams within the IRW, do you see</p> <p>3 that?</p> <p>4 A Yes, sir.</p> <p>5 Q Now, that would include -- that's that 3,800 1:20PM</p> <p>6 miles?</p> <p>7 A Yes, sir.</p> <p>8 Q And you've agreed with me, I think, that that</p> <p>9 total mileage includes order one streams?</p> <p>10 A It's whatever on the GIS coverages. I'm not sure 1:20PM</p> <p>11 if that's designated on that GIS coverage or not.</p> <p>12 Q And then if you separate out first and second</p> <p>13 order streams and do only third and above, it reduces</p> <p>14 dramatically the 13,347?</p> <p>15 A Yes, sir. 1:21PM</p> <p>16 Q And is that simply a function of multiplying 100</p> <p>17 feet -- actually multiplying 200 feet times the total</p> <p>18 number of stream miles?</p> <p>19 A Yes, with the added caveat that it's only pasture</p> <p>20 and grassland, based on the intersection of, again, the 1:21PM</p> <p>21 GIS land coverage.</p> <p>22 Q So somebody had to perform the function of</p> <p>23 separating out streams in the IRW that flow through</p> <p>24 pastures as opposed to those that flow through forested</p> <p>25 sections, is that right? 1:21PM</p>	<p>1 constructed and maintained buffer strips would remove 1:23PM</p> <p>2 85 percent of phosphorus that would otherwise reach the</p> <p>3 river?</p> <p>4 A Yes, for as long as the vegetative filter strip</p> <p>5 was well maintained -- 1:23PM</p> <p>6 Q Okay.</p> <p>7 A -- and not overwhelmed.</p> <p>8 Q Well, what harm would 15 percent of the total</p> <p>9 phosphorous from the land application of chicken litter</p> <p>10 that now reaches Lake Tenkiller cause? Do you know the 1:23PM</p> <p>11 answer to that question?</p> <p>12 A I'm trying to think. I mean, it's one of</p> <p>13 Dr. Engel's model runs. He output that number so it</p> <p>14 should be in both Dr. Engel's and Dr. Wells' scenarios.</p> <p>15 Q It's not your area? 1:24PM</p> <p>16 A No, sir.</p> <p>17 Q Now, is the 85 percent removal applicable to</p> <p>18 buffer strips that are only riparian into the third</p> <p>19 order streams?</p> <p>20 A Both scenarios, all streams and third order and 1:25PM</p> <p>21 above.</p> <p>22 Q We may have talked about this earlier, I apologize</p> <p>23 if we have, but you did not consider the effectiveness</p> <p>24 of fencing cattle in the streams?</p> <p>25 A Not in this part of the report, no. 1:25PM</p>
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<p>1 A Yeah, they're in the GIS software. 1:21PM</p> <p>2 Q So the computer did that?</p> <p>3 A Yes, sir. But Robert Van Waasbergen is the guy</p> <p>4 that generated the numbers, so --</p> <p>5 Q You mean he generated the numbers for your use or 1:22PM</p> <p>6 you simply read his report?</p> <p>7 A He generated the number for my use.</p> <p>8 Q So you had communications with him?</p> <p>9 A Yeah.</p> <p>10 Q And did you have correspondence with him? 1:22PM</p> <p>11 A It's in the e-mail record.</p> <p>12 Q Okay. So what is the effectiveness of buffer</p> <p>13 strips without the cessation of land application of</p> <p>14 poultry litter?</p> <p>15 A I believe in terms of the overall effectiveness, 1:22PM</p> <p>16 we used the same percent removal in terms of sheet flow</p> <p>17 coming out of the filter strip versus that leaving it.</p> <p>18 It's just a matter of there's a bigger source term</p> <p>19 under the continued application.</p> <p>20 Q Can you tell me what that number -- what that 1:23PM</p> <p>21 percentage of removal is?</p> <p>22 A I think we're using right around 85 percent of --</p> <p>23 Bernie Engel should have that number directly.</p> <p>24 Q So assuming 85 percent to be the true number, is</p> <p>25 it your testimony that you believe that properly 1:23PM</p>	<p>1 Q Have you later? 1:25PM</p> <p>2 A Only in conjunction with other best management</p> <p>3 practices that falls under the category of needs</p> <p>4 additional assessment to close the data gaps.</p> <p>5 Q Are you telling me that you and the state's team 1:25PM</p> <p>6 of experts are unable to measure the impact of streams</p> <p>7 caused by cattle having access not being fenced out?</p> <p>8 A No.</p> <p>9 Q What are you telling me?</p> <p>10 A That the contribution of cattle was part of Dr. 1:26PM</p> <p>11 Engel's work in terms of phosphorus. I think it was</p> <p>12 roughly six percent, but don't quote me on that.</p> <p>13 Q Okay. Have you read Dan Storm's recent work?</p> <p>14 A I've read a number of Dr. Storm's papers.</p> <p>15 Q Did you see his model that estimated the chicken 1:26PM</p> <p>16 litter land application contribution of phosphorus to</p> <p>17 the river and lake being 13 percent of the total?</p> <p>18 MR. BLAKEMORE: Object to form.</p> <p>19 A I don't -- sorry, could you say that one more</p> <p>20 time? 1:27PM</p> <p>21 Q Did you read that, that he says 13 percent based</p> <p>22 on his model?</p> <p>23 MR. BLAKEMORE: Object to form.</p> <p>24 A I don't recall.</p> <p>25 Q Did you take his work product into consideration 1:27PM</p>

27 (Pages 102 to 105)

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<p>1 in issuing your report and reaching your conclusions? 1:27PM</p> <p>2 A I believe there are aspects of his various studies</p> <p>3 that were reviewed. To the degree they were</p> <p>4 incorporated, I can't recall.</p> <p>5 Q So you're unable to tell me whether or not you 1:27PM</p> <p>6 utilized his 13 percent contribution?</p> <p>7 A I think that's a Dr. Engel question more than me.</p> <p>8 Q And I do not see Dan Storm on your Section 7</p> <p>9 references anywhere. Did you really look at his work</p> <p>10 product or not? 1:28PM</p> <p>11 A Yeah, I looked at it.</p> <p>12 Q You looked at it and rejected it and, therefore,</p> <p>13 did not include it?</p> <p>14 A Or the applicable portions of it were better</p> <p>15 utilized by Dr. Engel rather than me. 1:28PM</p> <p>16 Q Why would it cost \$55 million a year to maintain</p> <p>17 buffer strips once they're in place?</p> <p>18 A Predominately, based on the types of soils,</p> <p>19 relatively thin soils, and anticipating a higher than</p> <p>20 average cost to keep those maintained. Basically, the 1:29PM</p> <p>21 effectiveness of the vegetative filter strip relies on</p> <p>22 the flow being uniformly distributed across the area</p> <p>23 that we're talking about in order to achieve the 85</p> <p>24 percent effectiveness, and I'm anticipating that that's</p> <p>25 going to be a challenge for this watershed. 1:29PM</p>	<p>1 Q But at a cost of \$500 an acre? 1:31PM</p> <p>2 A That's the best estimate I could come up with.</p> <p>3 Q And the source of that estimate is?</p> <p>4 A I think there's a variety of sources. A lot of it</p> <p>5 is just seeding topsoil-type unit cost estimates over 1:31PM</p> <p>6 an acre.</p> <p>7 Q You just threw a dart on that one, didn't you?</p> <p>8 MR. BLAKEMORE: Object to form.</p> <p>9 A No -- well, I think you can develop a -- certainly</p> <p>10 a more quantitative approach, but I think based on the 1:31PM</p> <p>11 level of effort that we have, it's going to be --</p> <p>12 that's my best estimate at this point.</p> <p>13 Q Is there a book somewhere that says it's going to</p> <p>14 cost \$500 an acre?</p> <p>15 A There's different sources that have, you know, 1:32PM</p> <p>16 unit prices established. Costs that stream -- or</p> <p>17 vegetative filter strips of cost historically, sure.</p> <p>18 Q But none of that was directed specifically at the</p> <p>19 IRW?</p> <p>20 A I'm not sure. 1:32PM</p> <p>21 Q Is there some kind of literature values?</p> <p>22 A Based on the body of work that I've reviewed in</p> <p>23 preparing this, yeah.</p> <p>24 Q We'll be able to find that body of work in your</p> <p>25 comment sections? 1:32PM</p>
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<p>1 Q Well, what calculations did you utilize to come up 1:29PM</p> <p>2 with the \$455 million annual cost? If we wanted to --</p> <p>3 if we wanted to look over your shoulder and figure out,</p> <p>4 you know, how you reached that number, where would we</p> <p>5 go? 1:29PM</p> <p>6 A Table 2 and Table 3 summarize the unit cost</p> <p>7 calculation for maintenance of, I assume, unit cost of</p> <p>8 \$500 per acre.</p> <p>9 Q For acquisition or for maintenance?</p> <p>10 A That's maintenance. 1:30PM</p> <p>11 Q \$500 an acre?</p> <p>12 A Yes, sir.</p> <p>13 Q What do you do -- what do you do with that \$500?</p> <p>14 A Repair any gullies that have been -- that have</p> <p>15 developed, make sure that the plantings are -- that the 1:30PM</p> <p>16 vegetation is still complete, there's no bare spots.</p> <p>17 If there's any erosion, gullies, you know, make sure</p> <p>18 you bring in additional soils and reestablish</p> <p>19 vegetation so that the integrity of the filter strip is</p> <p>20 maintained. 1:30PM</p> <p>21 Q But are you able to tell us those things would</p> <p>22 actually have to be done?</p> <p>23 A I'm reasonably certain that maintenance will need</p> <p>24 to be performed to maintain the effectiveness of the</p> <p>25 vegetative filter strip. 1:31PM</p>	<p>1 A I believe so. 1:32PM</p> <p>2 Q All right. Let's move to residential drinking</p> <p>3 water. And you start out talking about, in Page 27,</p> <p>4 reverse osmosis, ionic change, and ultraviolet</p> <p>5 treatment? 1:33PM</p> <p>6 A Uh-huh.</p> <p>7 Q Those are the three treatments that you're going</p> <p>8 to discuss in the report, is that true?</p> <p>9 A I actually lump all those treatments -- all those</p> <p>10 treatment technologies together for the purposes of 1:33PM</p> <p>11 this remedial technology, which is basically point of</p> <p>12 use at an individual residence for treating the</p> <p>13 drinking water.</p> <p>14 Q What about chlorination?</p> <p>15 A I did not evaluate chlorination, I used 1:33PM</p> <p>16 ultraviolet as a surrogate.</p> <p>17 Q Why didn't you look at chlorination?</p> <p>18 A As much professional bias as anything else, but it</p> <p>19 would involve the addition of bleach, which would have</p> <p>20 taste concerns, and I just wasn't familiar with any 1:34PM</p> <p>21 point of use treatment approaches that have reliably</p> <p>22 put together a chlorination system for this type of</p> <p>23 application.</p> <p>24 Q Speaking of bleach, that's what people out there</p> <p>25 really do, isn't it, they, once every few months, open 1:34PM</p>

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<p>1 up the cap of the well and pour a gallon of bleach down 1:34PM</p> <p>2 it and go about their business, is that right?</p> <p>3 A I believe that's common practice, yeah.</p> <p>4 Q How much would that cost?</p> <p>5 A Probably a couple bucks a gallon. 1:34PM</p> <p>6 Q Maybe \$10 a year maybe?</p> <p>7 A Maybe.</p> <p>8 Q \$8 or \$10 a year for how many wells?</p> <p>9 A Again, that's assuming that the point of</p> <p>10 contamination is basically the well itself and growth, 1:34PM</p> <p>11 I think that's typically what that treatment is geared</p> <p>12 towards is eliminating the microbiological buildup on</p> <p>13 the screen. That's not going to address an ongoing</p> <p>14 contamination from poultry litter.</p> <p>15 Q Same question I had earlier, a slightly different 1:35PM</p> <p>16 context, are you able, or anybody on your team, to</p> <p>17 identify one person in the IRW who drinks water out of</p> <p>18 the ground who is sick from it?</p> <p>19 A Not to my knowledge.</p> <p>20 Q Have you tried? 1:35PM</p> <p>21 A Not to my knowledge. I don't know, I guess, is a</p> <p>22 better response.</p> <p>23 Q So you'll agree that if I wanted to pour some</p> <p>24 bleach down my well, I would just go to the grocery</p> <p>25 store and buy it, right? 1:35PM</p>	<p>1 Q It's not a health issue? 1:37PM</p> <p>2 A No, sir.</p> <p>3 Q It's an esthetic issue?</p> <p>4 A Yes, sir.</p> <p>5 Q Ultraviolet treatment kills bacteria? 1:37PM</p> <p>6 A Yes, sir.</p> <p>7 Q Do you know of any commercially-available</p> <p>8 ultraviolet treatment systems available in the market</p> <p>9 for domestic water wells?</p> <p>10 A Yes, sir, I believe I cited those in the cost 1:37PM</p> <p>11 estimate.</p> <p>12 Q Where do I go to buy one of those?</p> <p>13 A I think there's various websites.</p> <p>14 Q But those are not commonly used in rural areas,</p> <p>15 are they? 1:37PM</p> <p>16 A I don't know.</p> <p>17 Q Now, your cost estimate for this aspect of</p> <p>18 remediation is between \$430,000 on the low side and</p> <p>19 \$4.8 million on the high side?</p> <p>20 A Uh-huh, yes. Sorry. 1:38PM</p> <p>21 Q Why that range?</p> <p>22 A The cost estimate looks at two scenarios. One is</p> <p>23 strictly addressing the nitrogen issue and the other is</p> <p>24 addressing nitrogen plus bacteria.</p> <p>25 Q Let me -- I've got about one minute. On the next, 1:38PM</p>
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<p>1 A Sure. 1:35PM</p> <p>2 Q Where do I go to buy a reverse osmosis system?</p> <p>3 A There's a variety of measures that produce these</p> <p>4 different pieces of equipment. Even Sears.</p> <p>5 Q Do you know of anybody in the IRW who uses a 1:36PM</p> <p>6 reverse osmosis system for their domestic water well?</p> <p>7 A Personally, no.</p> <p>8 Q Do you know of anybody in the IRW who uses an</p> <p>9 ionic exchange system for their personal water well?</p> <p>10 A Personally, no, but ionic exchange is just a water 1:36PM</p> <p>11 softener, so I would assume some folks do.</p> <p>12 Q Do you pour that down the wellhead, also?</p> <p>13 A No.</p> <p>14 Q How did you introduce water softener to your --</p> <p>15 A Ionic exchange, basically, the media is usually 1:36PM</p> <p>16 kept in a pressure container and you pump the water</p> <p>17 through the bit.</p> <p>18 Q And as the name implies, water softener -- the way</p> <p>19 I understand it, is it makes your shampoo bubble up</p> <p>20 more than hard water would, right? 1:37PM</p> <p>21 A Yeah, I believe.</p> <p>22 Q That's the only thing I know about it.</p> <p>23 A It removes the calcium and magnesium.</p> <p>24 Q It's the calcium and magnesium?</p> <p>25 A Yes. 1:37PM</p>	<p>1 Page 28, you talk about household using ten gallons of 1:38PM</p> <p>2 water per day?</p> <p>3 A Yes, sir.</p> <p>4 Q Where did you get that number?</p> <p>5 A That was the -- I believe that's an EPA, 1:38PM</p> <p>6 two gallons per person per day, assuming a household of</p> <p>7 four to five folks, drinking water.</p> <p>8 Q EPA says that each person drinks two gallons of</p> <p>9 water a day?</p> <p>10 A Actually, it's two liters per day. 1:39PM</p> <p>11 Q So this number is wrong then?</p> <p>12 A No -- well, the assumption, I guess, is more than</p> <p>13 just drinking water. It's also cooking and washing</p> <p>14 water so it's higher than just the ingestion rate.</p> <p>15 Q But in terms of human health impact, washing with 1:39PM</p> <p>16 water out of the ground and cooking with it, it's not</p> <p>17 going to have any deleterious human health impacts, is</p> <p>18 it?</p> <p>19 A There's a lot of what-ifs or a lot of assumptions</p> <p>20 that go into that. I guess the -- the thought process 1:39PM</p> <p>21 was that, you know, if you're washing infants or things</p> <p>22 like that, that you would want it to be sterilized</p> <p>23 water.</p> <p>24 MR. ELROD: We need to take a break.</p> <p>25 THE VIDEOGRAPHER: We are now off the 1:40PM</p>

29 (Pages 110 to 113)

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1 record. The time is now 1:40 p.m. 1:40PM
 2 (Following a short recess, proceedings
 3 continued on the record.)

4 THE VIDEOGRAPHER: We are back on the
 5 record. The time is now 1:51 p.m. 1:50PM
 6 Q All right. Mr. King, we're on Page 28 of your
 7 report and 4.3.3.3 is the paragraph. How many
 8 complaints from well water users in the IRW have you
 9 seen?

10 A I haven't seen any. 1:50PM

11 Q Have you -- in the doing of your work, did you
 12 inquire of any other experts or legal counsel in this
 13 case as to whether they had any complaints from
 14 domestic well users and the IRW about water?

15 A Well, with respect to this particular section, 1:51PM
 16 this work was based on the samples from -- from CDM's
 17 60 well -- residential well sampling event, so whether
 18 or not folks would have picked up on a bacterial issue
 19 or a nitrogen issue, I'm not sure complaints would be
 20 the right metric to talk about. 1:51PM

21 Q Okay. But if you could answer my question,
 22 please. Have you seen or have you been told that there
 23 exists any complaints from domestic well users in the
 24 IRW about water quality?

25 A No, sir. 1:52PM

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1 Q Don't you think, sir, that if people were getting 1:52PM
 2 sick from drinking the water, they would know it?

3 MR. BLAKEMORE: Object to form.

4 A I don't think that's an area that I can weigh in
 5 on. 1:52PM

6 Q You don't know one way or the other?

7 A I'm not sure. Folks get sick for a variety of
 8 reasons. I'm not sure they would attribute it to their
 9 water.

10 Q You think people are too stupid to understand that 1:52PM
 11 there might be a connection between the water they're
 12 drinking and the fact that they're sick?

13 MR. BLAKEMORE: Object to the form.

14 A No, sir.

15 Q What is it about the lack of a person to make that 1:52PM
 16 connection, lack of the ability of a person to make
 17 that connection then?

18 A Again, I don't think that's an area that I'm
 19 expert in.

20 Q On your cost section on Page 29, in order to find 1:53PM
 21 how you derive the cost numbers, we need to go back to
 22 the tables?

23 A Yes, sir.

24 Q So what table do we go to this time? Table 6?

25 A Yes. 1:53PM

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1 Q I see numbers but I don't see -- I don't see how 1:53PM
 2 the cost per well was derived. Is there -- yeah, unit
 3 cost \$400 to abandon a well. Item cost, \$76,000, is
 4 that right?

5 A Sorry. Where are you? 1:54PM

6 Q On Table 6. Quantity units, unit cost, item cost.

7 A Yeah, there's two Table 6's, one is on Page 9, the
 8 other is on Page 10 of 12.

9 Q Okay. I was looking at 10. How do they differ?

10 A The number of wells impacted, 9 of ten -- or, 1:54PM
 11 sorry, 9 of 12 has the 980 wells and 10 of 12 has the
 12 190 wells.

13 Q And the difference between 190 and 980 comes from
 14 the Engel report?

15 A No, that comes from the estimate of the number of 1:54PM
 16 impacted wells based on the percent of the 60 wells
 17 that CDM found to be potentially at risk, multiplied
 18 times the estimated number of wells within the Illinois
 19 River Watershed, the Oklahoma portion thereof.

20 Q So what would the cessation of the land 1:55PM
 21 application of chicken litter have to do with reducing
 22 the number from 980 to 190?

23 A The 980 reflects the bacteriological
 24 contamination, so with the cessation, within the course
 25 of a year, those wells would be cleaned up or cleared 1:55PM

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1 up. 1:55PM

2 Q Okay. And I think we've already discussed
 3 pathogenic bacteria. You're unable to tell me that any
 4 of these wells were discovered to have any pathogenic
 5 bacteria in them, is that true? 1:55PM

6 A Well, the criteria that we used is total
 7 coliforms, so these had -- the basis for the ratio was
 8 the number of wells that had detection of total
 9 coliforms, yes.

10 Q And total coliforms, a total coliform count or 1:56PM
 11 finding is irrelevant in determining whether the source
 12 of that bacteria was chicken litter, true?

13 MR. BLAKEMORE: Object to form.

14 A I would say I can't tell you for sure what the
 15 source of contamination is based upon a total coliform 1:56PM
 16 count, yes.

17 Q All right. Now, so why are you -- that being the
 18 case, why are you laying all of these costs onto the --
 19 this lawsuit?

20 A There could be other reasons. I just am operating 1:56PM
 21 under the assumption that the primary cause and effect
 22 is poultry waste.

23 Q Okay. And your source for that assumption is
 24 what?

25 A It's the general practice of -- of poultry land 1:57PM

30 (Pages 114 to 117)

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<p>1 application. 1:57PM</p> <p>2 Q And that's it?</p> <p>3 A For this particular item, yeah.</p> <p>4 Q Where did you get your per-unit costs of -- look</p> <p>5 at Table 6, please. Are you there? 1:57PM</p> <p>6 A Which Table 6?</p> <p>7 Q Nine of 12.</p> <p>8 A Okay.</p> <p>9 Q First column is install new well.</p> <p>10 A Uh-huh. 1:58PM</p> <p>11 Q And then, is that 568,400?</p> <p>12 A Yeah.</p> <p>13 Q 568,400 new wells?</p> <p>14 A Lineal feet. Sorry.</p> <p>15 Q Oh, okay, LF is lineal feet? 1:58PM</p> <p>16 A Yeah.</p> <p>17 Q And you're saying it costs \$20 per lineal feet to</p> <p>18 drill and install a new well?</p> <p>19 A Yeah, \$20 for the actual drilling, \$10 of -- I'm</p> <p>20 sorry, the units are wrong on that. For the next line, 1:58PM</p> <p>21 for Number 3, new pipes, that should be \$10 per lineal</p> <p>22 foot rather than each.</p> <p>23 Q Okay. Where did you get those numbers?</p> <p>24 A Talking to local well drillers.</p> <p>25 Q Who did you talk to? 1:58PM</p>	<p>1 A Yep. 1:59PM</p> <p>2 Q And while you had them on the phone, did you ask</p> <p>3 them whether there was a bacteria problem in the</p> <p>4 Illinois River water table?</p> <p>5 A No, I don't think so. 2:00PM</p> <p>6 Q Why didn't you ask them?</p> <p>7 A I don't know.</p> <p>8 Q Do you know when well drillers drill a well in</p> <p>9 Northeastern Oklahoma destined for domestic purposes,</p> <p>10 do you not know, sir, that they are required to send to 2:00PM</p> <p>11 a water-testing laboratory the first water, first blush</p> <p>12 of water?</p> <p>13 MR. BLAKEMORE: Object to the form.</p> <p>14 A I don't -- I didn't -- I didn't know that</p> <p>15 specifically, but -- 2:00PM</p> <p>16 Q If that's true, wouldn't the people out there who</p> <p>17 are actually drilling domestic water wells be the best</p> <p>18 source of information as to whether or not the water</p> <p>19 table is contaminated?</p> <p>20 A I would not -- I guess I wouldn't classify that as 2:00PM</p> <p>21 the best source of information, but certainly a source.</p> <p>22 Q And while you had them on the phone, did you ask</p> <p>23 them whether there was any widespread illnesses caused</p> <p>24 by drinking water in the area?</p> <p>25 A That's not a question I would ask a driller. 2:01PM</p>
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<p>1 A There was a couple well drillers I just called out 1:58PM</p> <p>2 of -- basically, out of the Yellow Pages.</p> <p>3 Q And who are they?</p> <p>4 A I don't recall.</p> <p>5 Q How would you find out the answer to that 1:58PM</p> <p>6 question?</p> <p>7 A I guess I'd have to look up the information again</p> <p>8 and try and --</p> <p>9 Q Can you do that?</p> <p>10 A Sure. 1:59PM</p> <p>11 Q And get it to Mr. Blakemore?</p> <p>12 A (Nods head.)</p> <p>13 Q So you opened the Yellow Pages in, what, Jay</p> <p>14 Oklahoma, Stillwell?</p> <p>15 A I forget what specific cities, but they were close 1:59PM</p> <p>16 to the Illinois River Watershed.</p> <p>17 Q And you blind-dialed two well drillers, as I</p> <p>18 understand it, right?</p> <p>19 A On that, I might have dialed more, but two that I</p> <p>20 talked to. 1:59PM</p> <p>21 Q And you asked them how much it would cost to drill</p> <p>22 a well in Northeast Oklahoma?</p> <p>23 A Yeah, in this general vicinity.</p> <p>24 Q And as we sit here, you're unable to tell us who</p> <p>25 those people were? 1:59PM</p>	<p>1 Q Why not? 2:01PM</p> <p>2 A I guess I was more interested in what they had to</p> <p>3 say about depth of the water table and unit pricing was</p> <p>4 the purpose of my call.</p> <p>5 Q Did you ask them approximately how many domestic 2:01PM</p> <p>6 wells they had drilled in the course of a year?</p> <p>7 A I don't recall that specific question.</p> <p>8 Q Do you have notes on your conversation with these</p> <p>9 people?</p> <p>10 A Yes. 2:02PM</p> <p>11 MR. ELROD: We ask that we get those also.</p> <p>12 Q Now, we moved to 4.4. What are little fines,</p> <p>13 F-I-N-E-S?</p> <p>14 A Sorry. Where are we?</p> <p>15 Q First line under 4.4. You say, "The nature of the 2:02PM</p> <p>16 rivers in the IRW is course sediments with little</p> <p>17 fines."</p> <p>18 A With a small quantity of fines.</p> <p>19 Q What is a "fine"?</p> <p>20 A Generally, it's material that passes a 200 mesh. 2:02PM</p> <p>21 Q 200 what mesh?</p> <p>22 A 200 mesh from a standard soil classification</p> <p>23 system.</p> <p>24 Q How big is a fine then?</p> <p>25 A About .075 millimeters and below, I believe, or 2:03PM</p>

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<p style="text-align: right;">Page 122</p> <p>1 microns and below. 2:03PM</p> <p>2 Q All right.</p> <p>3 A I would have to look it up to be --</p> <p>4 Q What is a course sediment?</p> <p>5 A Anything above that; sands, gravels, cobbles. 2:03PM</p> <p>6 Q Okay. So it's your testimony that the typical</p> <p>7 rivers within the IRW contain course sediments with</p> <p>8 little fines?</p> <p>9 A That's my understanding based on the information</p> <p>10 that was provided. 2:03PM</p> <p>11 Q And who is the source of that information?</p> <p>12 A It could have been Bert Fisher.</p> <p>13 Q Do you know who it was?</p> <p>14 A I can't recall. It could have been the CDM work</p> <p>15 directly. 2:04PM</p> <p>16 Q Well, you agree with me that the land application</p> <p>17 of chicken litter and its use as fertilizer would have</p> <p>18 nothing to do with the notion that the rivers contain</p> <p>19 course sediment and little fines?</p> <p>20 A I'm not sure. Could you restate the question? 2:04PM</p> <p>21 Q Yeah, it was a bad question. I was having</p> <p>22 difficulty in the middle of it, quite frankly.</p> <p>23 The landing application of chicken litter</p> <p>24 would have nothing to do with the creation of a</p> <p>25 water body that -- the creation of course sediments 2:05PM</p>	<p style="text-align: right;">Page 124</p> <p>1 technologies were screened out on that basis. 2:06PM</p> <p>2 Q I'm still not understanding your point. What do</p> <p>3 you mean by the high energy of the river?</p> <p>4 A Fast flowing, erosion, as opposed to depositional.</p> <p>5 Q Okay. I understand that. Stream bank erosion and 2:07PM</p> <p>6 things of that nature?</p> <p>7 A Uh-huh.</p> <p>8 Q And stream bank erosion occurs in the rivers in</p> <p>9 the IRW, correct?</p> <p>10 A Yes, sir. 2:07PM</p> <p>11 Q And this stream bank erosion would be a</p> <p>12 contributing source to course sediments, correct?</p> <p>13 A Yes.</p> <p>14 Q As well as little fines?</p> <p>15 A Depending on the makeup of the banks. 2:07PM</p> <p>16 Q So what was the last part of the sentence you just</p> <p>17 said to me, that it would -- in terms of remedial</p> <p>18 actions? How does that, the nature of the river, have</p> <p>19 to do -- that you've described have to do with remedial</p> <p>20 actions and the effectiveness or lack of effectiveness? 2:07PM</p> <p>21 A The -- again, the nature of the river was relevant</p> <p>22 to certain of the technologies that we identified in</p> <p>23 the previous section and that was the reason some of</p> <p>24 the technologies were screened out.</p> <p>25 Q Okay. Which technologies were screened out based 2:07PM</p>
<p style="text-align: right;">Page 123</p> <p>1 and little fines in a river, true? 2:05PM</p> <p>2 A I would, for the most part, yeah.</p> <p>3 Q Okay. So what is the association between the</p> <p>4 assertion that the nature of the rivers in the IRW have</p> <p>5 course sediments with little fines and the issue of 2:05PM</p> <p>6 disinfection byproducts?</p> <p>7 A Well, the relationship between course sediments</p> <p>8 and fines, I guess, wasn't really relevant to the</p> <p>9 drinking water standard as much as it was to the</p> <p>10 remediation options like capping or dredging that was 2:05PM</p> <p>11 the primary consideration.</p> <p>12 Q Here's the way I'm going to try to get at this and</p> <p>13 I'm not doing a very good job of it.</p> <p>14 The first sentence under 4.4 says, "Due to</p> <p>15 the nature of the rivers within IRW, names course 2:06PM</p> <p>16 sediments with little fines, remedial technologies</p> <p>17 that might address P removal were screened out based</p> <p>18 on limited ability to achieve remedial goals." Tell</p> <p>19 me what that means.</p> <p>20 A Primarily they're -- I was trying to say that 2:06PM</p> <p>21 because of the high energy of the rivers within the</p> <p>22 Illinois watershed, that things like capping and</p> <p>23 dredging of sediments, there's not a whole lot of</p> <p>24 sediments where phosphorus settles out into -- within</p> <p>25 the watershed -- the rivers of the watershed so those 2:06PM</p>	<p style="text-align: right;">Page 125</p> <p>1 on that fact? 2:08PM</p> <p>2 A Capping, dredging.</p> <p>3 Q Are you saying that you concluded that capping --</p> <p>4 what is capping?</p> <p>5 A Basically, putting a layer of granular material or 2:08PM</p> <p>6 other material on top of a sediment on --</p> <p>7 Q Okay.</p> <p>8 A -- the bottom sediment.</p> <p>9 Q Capping and dredging would not be effective in</p> <p>10 this river system because you're going to get more 2:08PM</p> <p>11 inflow of stuff coming at you, is that the point?</p> <p>12 A Yeah, it would either erode the cap on the</p> <p>13 material or -- there wasn't enough phosphorus within</p> <p>14 those sediments to really do much with respect to</p> <p>15 remediation. 2:08PM</p> <p>16 Q Okay. Let's focus on that what you just got</p> <p>17 through saying. There's not enough phosphorus in the</p> <p>18 course sediments in the -- in the river in order to</p> <p>19 encourage what?</p> <p>20 A In order to make capping or dredging effective 2:09PM</p> <p>21 phosphorus removal technology.</p> <p>22 Q I apologize for having difficulty tracking with</p> <p>23 you. Is it your testimony that -- that the sediments</p> <p>24 of the Illinois River, suspended sediments in the</p> <p>25 Illinois River do not carry much phosphorus, is that 2:09PM</p>

32 (Pages 122 to 125)

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1 what you just told me? 2:09PM
 2 A No, sir, it's referring to the bedded sediments.
 3 Q Okay. It's your testimony that the bedded
 4 sediments of the Illinois River do not carry much
 5 phosphorus, is that what your testimony is? 2:09PM
 6 A With respect to phosphorus that's reintroduced
 7 into the system, that either capping or dredging would
 8 serve to eliminate phosphorus to any meaningful degree.
 9 Q Who told you that?
 10 A I think that was based on discussions with 2:10PM
 11 Dr. Engel, Dr. Stevenson, Dr. Olsen.
 12 Q Did Olsen, Stevenson and Engel tell you that there
 13 was not much phosphorus or any re-suspension activity
 14 going on in the river?
 15 A I think they basically described the general 2:10PM
 16 nature of the river and the coarseness of the sediment
 17 and I might have jumped to a conclusion.
 18 Q And sedimentation of the river is a direct result
 19 of the topography through which it flows?
 20 A I would say it's the function of the velocity of 2:10PM
 21 the bulk water and the velocity of the water is the
 22 function of the gradient stream grade.
 23 Q Does your organization also contribute the
 24 sedimentation in the Illinois River?
 25 A Sediment loads? 2:11PM

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1 Q Yes. 2:11PM
 2 A Yes.
 3 Q And have you attempted to measure urbanization
 4 contribution?
 5 A I believe Dr. Engel quantified those. 2:11PM
 6 Q And you accept at face value his quantification?
 7 A Yes.
 8 Q Now, looking at 4.4.1, you make the statement
 9 that, "Organic matters correlated with a precursor that
 10 form DVPs"? 2:11PM
 11 A Mm-hmm.
 12 Q -- "when drinking water is disinfected." My
 13 question to you is: Is there an actual DVP problem in
 14 the real world in the Illinois River Watershed,
 15 including Lake Tenkiller? 2:12PM
 16 A Based on the data that I've seen that there is --
 17 there is DHM and haloacetic acid formation within
 18 the -- particularly the smaller, less sophisticated
 19 water treatment plants, based on algae blooms.
 20 Q Who told you that? 2:12PM
 21 A Dr. Stevenson, Cooke, Welch.
 22 Q Compared to regulatory standards, how bad did they
 23 say it was?
 24 A I believe Dr. Leaf looked at that.
 25 Q You didn't conduct your own independent 2:13PM

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1 investigation into DVPs, THMs or haloacetic acids, 2:13PM
 2 right?
 3 A No, sir.
 4 Q What are the four water treatment plants that use
 5 the Illinois River itself as source water? 2:13PM
 6 A I've got five, but the -- it was a mistake in what
 7 I put together here, but it's Tahlequah, and I had
 8 Cherokee County Rural Water District No. 11 as being a
 9 source, which I understood to have a source, but I
 10 didn't realize that it was actually a subsequent system 2:14PM
 11 to the Tahlequah, so that number is in error.
 12 Q Which number is in error?
 13 A Just the costs associated with the Cherokee County
 14 Rural Water District that would have been incorporated
 15 within the Tahlequah. 2:14PM
 16 Q What table are you looking at?
 17 A Sorry. Table 7. And the remaining four, Flint
 18 Ridge Rural Water District, Sequoyah County Rural Water
 19 District No. 5, and Geary County No. 5.
 20 Q Which is actually on the Baron Fork? 2:14PM
 21 A Yes, sir.
 22 Q What about water that's drawn from Lake Tenkiller,
 23 is that Table 8?
 24 A Yes, sir.
 25 Q Do you know how many actual water customers there 2:15PM

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1 are for the four that draw from the river? 2:15PM
 2 A I would have to look that up.
 3 Q Do you have that number somewhere?
 4 A I believe that number was provided to me in the
 5 e-mail record. 2:15PM
 6 Q And do you know the total number of -- maybe we'll
 7 find it then -- the total number of water users that
 8 consume water drawn from Lake Tenkiller?
 9 A Again, the same table, I believe.
 10 Q Can you tell me the nature and types of the water 2:15PM
 11 treatment systems that draw from Tenkiller?
 12 A No.
 13 Q You cannot?
 14 A No, I cannot.
 15 Q Is there an agency in the State of Oklahoma that 2:16PM
 16 is charged with the responsibility of making sure that
 17 water consumed by Oklahoma Residents through treatment
 18 systems is safe for consumption?
 19 A Yes, sir.
 20 Q And who is that? 2:16PM
 21 A I believe it's the State Department of
 22 Environmental Quality.
 23 Q And has the State of Oklahoma DEQ ever raised an
 24 and alarm about DVPs, THMs and haloacetic acid?
 25 A Based on my knowledge of where the implementation 2:16PM

33 (Pages 126 to 129)

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<p>1 of that rule is, Stage Two, disinfection byproduct 2:16PM</p> <p>2 rule, they're currently in the information gathering</p> <p>3 stage and at the end of that information gathering</p> <p>4 stage, then additional remedies are dictated under the</p> <p>5 Safe Drinking Water Act or additional improvements are 2:16PM</p> <p>6 going to be dictated.</p> <p>7 MR. McDANIEL: Objection as nonresponsive.</p> <p>8 Q The answer to my question is, sir, you know of no</p> <p>9 alarms being raised by the Oklahoma DEQ in terms of</p> <p>10 water safety standards -- 2:17PM</p> <p>11 MR. BLAKEMORE: Object to the form.</p> <p>12 Q -- being violated as far as DVPs, THMs and AHAs</p> <p>13 are concerned?</p> <p>14 MR. BLAKEMORE: Object to the form.</p> <p>15 A I believe I answered the question. 2:17PM</p> <p>16 Q I don't think you did, in all due respect.</p> <p>17 A Okay.</p> <p>18 Q What you told me was that the state is now in a</p> <p>19 Stage Two process, under the safe drinking and that</p> <p>20 they may or may not do something on down the road after 2:17PM</p> <p>21 they complete investigation. That's what you told me,</p> <p>22 isn't it?</p> <p>23 MR. BLAKEMORE: Object to form.</p> <p>24 A Yes, sir.</p> <p>25 Q My question to you is: Up until this moment in 2:17PM</p>	<p>1 we have attempted to do, assuming my staff did it 2:20PM</p> <p>2 correctly, is make hard copies of all of the e-mails</p> <p>3 that were contained on the disk that we received.</p> <p>4 A Uh-huh.</p> <p>5 Q Your disk. These start on January 3, 2008, and 2:20PM</p> <p>6 end on May 7, 2008. Look at the last page.</p> <p>7 A Okay.</p> <p>8 Q Do you think we have all of the e-mails to which</p> <p>9 you were a party concerning this case between the</p> <p>10 question mark? 2:21PM</p> <p>11 A You have everything that has anything to do with</p> <p>12 material that I considered, to the best of my</p> <p>13 knowledge, yeah.</p> <p>14 Q Well, do we have all e-mail exchanges between you</p> <p>15 and other experts or between you and legal counsel 2:21PM</p> <p>16 whether or not it had anything to do with considered</p> <p>17 materials?</p> <p>18 A I'm not sure about that.</p> <p>19 Q Okay.</p> <p>20 A I think so, but I just don't know. 2:21PM</p> <p>21 Q I mean, whether you were talking about materials</p> <p>22 that you considered or anything else having to do with</p> <p>23 this case, I want to make sure we've got all e-mail</p> <p>24 activity that you were a party to. Do you think we</p> <p>25 have? 2:22PM</p>
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<p>1 history, has anyone from the Oklahoma Department of 2:17PM</p> <p>2 Environmental Quality, which is charged the</p> <p>3 responsibility of making sure that the water being</p> <p>4 drunk and consumed by the citizens of Oklahoma has ever</p> <p>5 raised an alarm that there's a safety issue having to 2:18PM</p> <p>6 do with DVPs, THMs or AHAs?</p> <p>7 MR. BLAKEMORE: Object to the form.</p> <p>8 A Not to my knowledge.</p> <p>9 Q So looking at Page 31 of your report, what is it</p> <p>10 that you are doing for the total cost of \$233 million 2:18PM</p> <p>11 and the cost of \$28 million in aggregate, \$583 million</p> <p>12 present for cost over 30 years?</p> <p>13 A Based on the economic analysis that EPA put</p> <p>14 together, they developed estimates based on the size of</p> <p>15 various water treatment plants and what it would take 2:19PM</p> <p>16 to comply with this rule, and I used those numbers in</p> <p>17 developing the costs that would potentially be incurred</p> <p>18 in order to upgrade these water treatment plants.</p> <p>19 Q It's hard to read, but you're talking in the</p> <p>20 comment section of Table 8, EPA cost data from fed reg 2:19PM</p> <p>21 volume 71, Number 2, January 4, 2006, Page 459?</p> <p>22 A 456, I cite it in the report, too.</p> <p>23 Q It's in the body of the report?</p> <p>24 A Yes.</p> <p>25 Q Let me hand you what I've marked as King 4. What 2:19PM</p>	<p>1 A I think so. 2:22PM</p> <p>2 MR. ELROD: A signal to co-counsel, I</p> <p>3 don't intend to go through each and every one of</p> <p>4 these. I'm going to kind of hunt and peck a little</p> <p>5 bit, so if anybody else want to ask questions about 2:22PM</p> <p>6 particular ones, I just want to warn you, they might</p> <p>7 want to be thinking about what they want to ask</p> <p>8 about.</p> <p>9 Q And on the first page, Dr. Engel sends to David</p> <p>10 Page, copy to you, a recent journal paper that may be 2:22PM</p> <p>11 of interest. Do you know what the journal paper was?</p> <p>12 A I can't recall.</p> <p>13 Q You see the body of the e-mail to David Page, in</p> <p>14 which he says, "I have Sharpley's other paper from work</p> <p>15 done in Arkansas that shows a range of 2-7 percent of P 2:23PM</p> <p>16 from poultry manure is lost in runoff in the year it is</p> <p>17 applied." Do you see that, sir?</p> <p>18 A Yes, sir.</p> <p>19 Q You use those calculations at all in reaching any</p> <p>20 of the conclusions that you reached in this matter? 2:23PM</p> <p>21 A No, I relied on Dr. Engel for those types of</p> <p>22 calculations.</p> <p>23 Q And do you see where he goes on to say, "These are</p> <p>24 very simple relationships from locally-observed</p> <p>25 data" -- 2:23PM</p>

34 (Pages 130 to 133)

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1 A Mm-hmm. 2:23PM
 2 Q -- "combined with the mass balance work from
 3 Meagan may be a very powerful yet simple tool for
 4 describing P losses to the streams and Tenkiller," do
 5 you see that? 2:23PM
 6 A Mm-hmm.
 7 Q Are you familiar with the Meagan Smith balance
 8 report?
 9 A I think I have a copy of it, but I didn't --
 10 again, my conversations were with Dr. Engel. 2:24PM
 11 Q You've never spoken with Meagan Smith about that
 12 issue?
 13 A Not that I recall.
 14 Q Okay.
 15 MR. ELROD: David and Mr. Blakemore, do we 2:24PM
 16 agree that there's -- that there's an agreement that
 17 all of this e-mail traffic is authentic? Is that
 18 anywhere in our -- do we have any sort of agreement
 19 like that that you know of?
 20 MR. PAGE: You mean like it would be the 2:25PM
 21 foundation --
 22 MR. ELROD: Yes, authenticated.
 23 MR. PAGE: I'm not aware of that kind of
 24 agreement.
 25 MR. ELROD: Anybody else at the table have 2:25PM

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1 any weigh-in on that? 2:25PM
 2 MR. McDANIEL: There's no agreement on
 3 that.
 4 MR. ELROD: Let's go off the record for
 5 just a second. 2:25PM
 6 THE VIDEOGRAPHER: We are now off the
 7 record. The time is now 2:26 p.m.
 8 (Following a short recess, proceedings
 9 continued on the record.)
 10 THE VIDEOGRAPHER: We are back on the 2:35PM
 11 record. The time is now 2:36 p.m.
 12 Q Now, Mr. King, while we were off the record, is it
 13 true that you went through King Exhibit No. 4, a series
 14 of e-mails?
 15 A Yes, sir. 2:35PM
 16 Q Have you satisfied yourself that they -- this
 17 entire packet appears to be true and correct copies of
 18 e-mails that you sent, received or were a party to
 19 between May 7, 2008, and January 3, 2008, in connection
 20 with this litigation? 2:36PM
 21 A Yes, sir.
 22 Q There's some correspondence or some discussions in
 23 here between you and Dan Butler about Peacheater Creek?
 24 A Uh-huh.
 25 Q And I had my hand on them, I don't anymore. You 2:36PM

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1 and I have discussed a little bit what -- about those 2:36PM
 2 conversations that you and he had, and it mainly
 3 related to cattle being in Peach, correct?
 4 A Yes.
 5 Q And if you would turn to 238.0002. See down here? 2:37PM
 6 A .0002, okay.
 7 Q Well, there's a -- yeah, 238.0002.
 8 A Yes.
 9 Q You and Dan Storm are having e-mail conversations,
 10 correct? 2:38PM
 11 A Yes.
 12 Q Now, you are e-mailing him asking if he has time
 13 to talk?
 14 A Yes.
 15 Q And that's on April 23, 2008, at 3:10 p.m., 2:38PM
 16 correct?
 17 A That's what it says.
 18 Q And the next one I see is two days later,
 19 April 25, 2008, at 10:22 a.m. from Dan Storm to you in
 20 which he says, "I received your phone message, it will 2:39PM
 21 not be a problem. I am in meetings and will get to it
 22 this afternoon, Dan."
 23 A Uh-huh.
 24 Q What was he referring to?
 25 A Specifically, there was a GIS coverage that he was 2:39PM

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1 working on that Kelly thought we should take a look at, 2:39PM
 2 but it was only dealing with the Oklahoma side of the
 3 watershed.
 4 Q And what was the GIS coverage pertaining to?
 5 A I believe it was -- oh, boy. I'm drawing a blank 2:39PM
 6 right now. Something about the research that he was
 7 currently doing with respect to those fields that
 8 were -- something to do with susceptible to phosphorus
 9 or erosion of phosphorus, but we ended up not using
 10 that data because it was Oklahoma only and we couldn't 2:40PM
 11 apply it to the overall watershed so I've kind of
 12 forgot what the exact nature of the conversation was,
 13 but -- well, the nature of the conversation was just to
 14 request that GIS letter, which should be somewhere else
 15 in the e-mail records. 2:40PM
 16 Q Okay. Tell me what King No. 5 is.
 17 A This appears to be an initial draft of the table
 18 of contents for Robert -- or for Roger's expert report.
 19 Q Why would that be in your considered materials?
 20 A At one point, it was not determined that I was 2:41PM
 21 going to write my own report. It might have been a
 22 subset to Roger's.
 23 Q Do you know when this particular document was
 24 created?
 25 A I can't recall, but it should be an attachment to 2:42PM

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1 one of the e-mails. 2:42PM
 2 Q Okay. So it's your anticipation that we will --
 3 when we go through your e-mails, King No. 4, that we
 4 will see a reference to this being transmitted to you?
 5 A Yes. 2:42PM
 6 Q That's a yes?
 7 A Yes.
 8 Q What is King No. 6?
 9 A Again, it looks like some of the draft work from
 10 Dr. Wells. 2:43PM
 11 Q And, again, for our previous discussion, Base Case
 12 means what?
 13 A The period of calibration, I believe, between, oh,
 14 gosh, 1997 and 2006.
 15 Q So the Base Case number would be actual real world 2:43PM
 16 numbers?
 17 A I believe so, yes.
 18 Q Sampling site LK04 is Horseshoe Bend, is that
 19 true?
 20 A Up in that range, yes, sir. 2:44PM
 21 Q And Lake 03 is at a place called Carlisle Bend, is
 22 that true?
 23 A I'm not sure on that geographic name.
 24 Q But the number gets lower as we move towards the
 25 dam? 2:44PM

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1 A Yes, sir. 2:44PM
 2 Q Do you know whether there is a phosphorus or
 3 phosphate standard applicable to Lake Tenkiller?
 4 A The specific standard, I was relying on Dr. Welch
 5 and Dr. Cooke. 2:44PM
 6 Q Do you know whether the State of Oklahoma has
 7 imposed a standard on Lake Tenkiller?
 8 A I'm not aware of the standard for Lake Tenkiller.
 9 Q You're not aware that there is one or do you know
 10 that there is not one? 2:45PM
 11 A I'm not aware that there is one.
 12 Q Does that mean you know that there is not one?
 13 A Not necessarily, no.
 14 Q So how did you use this particular information in
 15 reaching your conclusions? 2:45PM
 16 A I relied on Dr. Wells' and Dr. Cooke's
 17 interpretation of Dr. Wells' model, I didn't try and
 18 develop an independent assessment.
 19 Q King No. 7 is the same chart but for total
 20 phosphorus, do you agree? 2:46PM
 21 A Yes, sir.
 22 Q How did you use this in your report?
 23 A Again, I relied on Dr. Welch and Dr. Cooke's
 24 analysis.
 25 Q Did you have conversations with Welch or Cooke 2:46PM

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1 about these particular samples? 2:46PM
 2 A About these particular samples?
 3 Q Yes. I believe you testified you had
 4 conversations with them over the telephone about
 5 various issues, but my question now to you is: Did you 2:46PM
 6 have conversations with them about King 7 and King 6?
 7 A I participated in discussions when they were
 8 talking about the model.
 9 Q What did they say about the numbers displayed on
 10 King 6 and King 7, the actual sampling analysis not 2:47PM
 11 projected into the future, but the actual in terms of
 12 whether it's good, bad, mediocre?
 13 A I can't honestly recall specifics. There was just
 14 discussion of the model output. At that phase, I think
 15 that was just one Dr. Wells was initially calibrating 2:47PM
 16 the model and there was back and forth discussions
 17 about did you look at this, did you look at that type
 18 stuff.
 19 Q This is King 8. What is this?
 20 A Appears to be a report or a presentation 2:48PM
 21 downloaded from the Internet.
 22 Q By you?
 23 A Probably, or one of my staff, yeah.
 24 Q From an Oklahoma agency Website?
 25 A I can't recall. 2:48PM

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1 Q Do you see the third page that says, "Is There A 2:48PM
 2 Problem?"
 3 A Uh-huh.
 4 Q "82 out of 37 surface water bodies reporting
 5 disinfection byproduct violations. Many attributable 2:49PM
 6 to excess algae."
 7 A Uh-huh.
 8 Q Do you know whether Lake Tenkiller is one of the
 9 82?
 10 A No, I do not. I mean, I would assume it is, but 2:49PM
 11 I'm not sure.
 12 Q You would assume that it is, but you don't know?
 13 A Well, the way the statement is written, "82 of 137
 14 surface water bodies reporting disinfection byproduct
 15 violation," I think they mean water treatment plants 2:49PM
 16 that have intakes on surface water bindings, but --
 17 Q By the way, are there water treatment facilities
 18 that draw water either out of the Illinois River or
 19 Lake Tenkiller, which are required to send those annual
 20 reports to their consumers telling them how good or bad 2:50PM
 21 their water is?
 22 MR. BLAKEMORE: Object to form.
 23 A I believe so.
 24 Q And Tahlequah would be one?
 25 A I believe so, yes. 2:50PM

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